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THE CLASSICAL IDEAL IN ARCHITECTURE.

"THE Present and Future of Architecture" was the original title of a paper announced to be read by Mr. Richardson at the meeting of the Architectural Association on February 22; but when the paper was actually read this very ambitious title had been disavowed, and the subject was defined as "The Modern Spirit in Architecture." The original title, which amounted to a promise of prophecy for the Future, certainly implied considerations too large and far-reaching to be dealt with in the limits of a sessional paper; even for a book it would be a somewhat valiant undertaking to forecast the future of architecture. But there was no reason to complain of the result. Under the simplified title Mr. Richardson read a paper which had the merit of being somewhat novel and at the same time suggestive in its main idea, which may be more correctly summarised by the heading we have put to this article than by either of the titles originally promulgated by the author.

It was suggested at the commencement of the paper that such a special consideration of the subject of architecture was called for at present, not in spite of the war, but because of it. War was a serious matter, which led us to think and act seriously; it was an appropriate occasion, therefore, for considering seriously our architecture and our attitude towards architecture, what we are doing with it and what we mean to do. In this feeling we entirely concur. And the thesis put forward by Mr. Richardson is one quite worthy of serious consideration. The special point of his argument was that we should take a large and comprehensive view of the tendencies of modern architecture, not confining ourselves to local developments in our own country, but taking a broad view of what has been done in the architecture of civilised countries generally during the last two hundred years. And the conclusion which he derives from this general view of the subject is that what he calls the "Classical tradition" has fairly established itself as the groundwork of modern architecture; not the Classical tradition in the form of mere Greek or Roman or Renaissance "revivals," but in the sense that all architecture, from the Egyptian down to modern times, is a great tradition which may be used as a basis for new tradition; that there is an element of continuity running all through it which forms the permanency of the architectural ideal. Taking this broad view of the subject, we get rid of the disturbing effect (to many minds) of the various English revivals of the last century—the Greek revival, the Gothic revival, etc., which successively ran their course and came to nothing; all these Mr. Richardson dismisses, as it were, with a wave of the hand, as merely "a century of experiments"—experiments, we may add, which to a great extent were purely insular. The Gothic revival, at all events, was so; it has no counterpart in any other country. And this broad view of architecture as a great Classic tradition tends to set us above the influence of merely local character and peculiarities. An attempt at a modern style founded on local character leads, said Mr. Richardson (and we quite agree with him), only to a *cul-de-sac*. As soon as the novelty of it is worn off it is seen to be merely a kind of backwater of style, quite outside of the main current of continuity in architecture. So also with the various eccentricities of detail which we have seen springing up around us so much of late, in London especially; efforts to be original at any cost, with a kind of originality which only preserves its effect as long as it is a novelty, and then is recognised as a mere superficial mannerism. Mr. Richardson was even bold enough to suggest (probably with a shock to some of his audience) that the idea of architecture as merely a building craft with the expression of construction as its basis has been far too much emphasised; that the architectural idea as a form of design comes first, and construction is merely the practical means of putting it into shape. A protest in this direction was perhaps needed; but it must be taken *cum grano*. The essential features of Gothic architecture certainly arose in the first instance out of constructional problems, and were in the main an expression of construction. But this constructional view of architecture has been pushed too far, especially by some of those writers on architecture who, like Ruskin, Morris, and others, could see no architectural virtue in any style but Gothic. It does not apply either to Greek, Roman, or Renaissance architecture; that it did not so apply was exactly the ground of Ruskin's indignation against "the pestilent Renaissance"; it does not apply either to Egyptian architecture, which was the architecture of a mystical poetic ideal carried out in an extremely simple and naïve form of construction. We can hardly even say that Hagia Sophia, although it is the supreme expression of domical structure, arose out of the desire to express that form of structure; it would rather seem that the idea of a great central space unencumbered by supports came first, and that then the means of covering it in had to be structurally devised. But Gothic architecture may be said to have arisen out of structure; and in leaving it practically out of his argument Mr. Richardson, whether consciously or unconsciously, perhaps evaded a difficulty.

The long series of lantern slides which were subsequently exhibited, as the illustrative corollary to the lecture, were well worth following out, constituting, as they did, a kind of comprehensive view of examples of modern architecture throughout the civilised world. Modern Gothic, it is true, was omitted; as before noted, it had been dismissed as an experiment of our own country only. And, after all, how many churches of the Gothic revival period are there which at present retain any interest for us? Very few, surely; some of Butterfield's; one or two of Street's, who struck out a line of his own sometimes; some few others by Bodley, Pearson, and Brooks; hardly one, we may say, of Scott's, the revivalist *par excellence*; the trail of the mere imitator is over them all. The fact might have been recognised, however, that the new Liverpool Cathedral is in the Gothic style, and that there is more in it than mere imitation. Nevertheless, the series of illustrations showed a most remarkable consensus among the nations towards the adoption, in somewhat varied forms, of the Classical ideal in architecture. The Americans of the present day seem, in fact, to have given themselves up rather too obviously (in their public buildings at least) to the reproduction of Classic architecture in detail (always on "Ecole des Beaux-Arts" lines) rather than to the more general adoption of the Classic ideal. There is a story of an eminent American architect saying to a pupil, whom he found designing a Corinthian capital:—"Do you think you can make a better capital than the Jupiter Stator?" And on getting a negative answer:—"Then why are you trying?" The Americans may have carried this tendency too far, but we believe in the main they are justified in their point of view, which is that design depends on the disposition of masses and that originality is not obtained by conscious effort. But the prevalence of the Classic spirit in many of the dwelling-houses a century ago in America, England, and on the Continent is very marked, and Mr.

Richardson rightly called attention to the sense of spaciousness in the design and planning of these houses of the Classic type. The tendency to cut up houses into "picturesque" quirks of roofing, so common in the suburban villa type, and so unfortunately encouraged in the designing of garden cities, has done much to destroy this expression of spaciousness and repose in ordinary-sized houses. In giving an example of the variation of the Classic column in the American house of the Colonial period Mr. Richardson did not, however, seem to realise, or did not mention, that the curious and interesting attenuation of the proportions of the Classic column arose from the fact that the Orders were carried out in wood and not in stone, a fact which almost suggests and justifies the employment of thinner proportions in the shaft. And while showing a photograph of St. George's Hall he omitted to call attention to one of the most remarkable instances of the Classic ideal, apart from copyism, in Elmes's effective treatment of the end portions of the building, with square columns and a screen halfway up them, which is really the façade of Denderah translated into Greek. A similar adoption of the late Egyptian ordinance of column and screen by an eminent French architect was duly noted, but Elmes did it first and on a much larger scale. In showing a slide made from a drawing of Ginain's beautiful building, the "Faculté de Médicine," Mr. Richardson justly characterised the drawing as "one of the most beautiful line drawings ever made," but did not mention the artist's name; it was a drawing made by Mr. Baggallay many years ago for an illustration in the *Builder*.

That the Classic ideal, understanding the words in their widest sense, has permanently fixed itself as the standard of modern architecture we have no doubt; and the important element in the paper read by Mr. Richardson consists in the fact that he suggested a new and wider reading of the word "Classical," and a new way of looking at the whole subject of modern architecture. And it had the merit of being a paper characterised by common sense.

In Kingsley's charming allegory, "The Water Babies," there occurs a crisis in the story where one of the characters is dangerously ill, and a list, filling a couple of pages or so, is given of the various medicaments which were tried to bring him round. It is a very varied list, including excerpts from Galen, Social Science meetings, *Saturday Review* articles, and—among many other things—they tried "Pure Bosh." There is a great deal of that article tried on architecture in these days by amateur literary prophets who are convinced that modern architecture is hopelessly sick, and that because it does not interest them it cannot possibly interest anyone else. They tell us, as Ruskin did, that architecture at the appearance of the Renaissance lost all its real interest and became a mere piece of mechanical pedantry. That we call, in Kingsley's phrase, "pure bosh"; Renaissance architecture is full of variety and interest for those who can see it. Then they inveigh against the new buildings of the present day as not expressing the spirit of the day. "Pure bosh" again. What do they mean by "the spirit of the day," and where do they get it from? If sixty or seventy years ago a large proportion of the public wished for the revival of mediæval religion, that *was* the spirit of the day, and the Gothic revival expressed it architecturally. If at this moment there is a turn of sympathy towards Classical ideals in literature and art, that *is* the spirit of the day, and it is getting more or less expression in the architecture of the day. If there is, as one cannot deny, a good deal of dull and uninteresting architecture produced at present, that is not because people are building according to a Renaissance or a Classical ideal, or because they have not got hold of a mystical something called the spirit of the day. What is the matter is a great deal simpler than that. Since the Renaissance, architecture has been a personal art; buildings are personally designed according to the taste and feeling of the architect, but with a more or less element of tradition in the details. To a considerable extent this must have been the case even in the mediæval period, only that we do not know the names of the architects. Otherwise, how is it that in Peterborough front we have unquestionably a production of architectural genius, while in Salisbury front we have only a collection of the commonplaces of mediæval detail? But in the present day the personal element in architectural design is frankly avowed. And if the architect is a man of enthusiasm, of character, and of genius, he will produce architecture which is striking and interesting, whatever style or ideal it is based upon. If he is a dull man, with no special character or genius, pursuing his profession as a mere business and without enthusiasm, he will produce dull and uninteresting architecture. That is the whole problem of modern architecture in a nutshell.

Houses, Finsbury-Square.

George Dance, R.A., and James Peacock, Architects. (*See page* 218.)

NOTES.

Competition Conditions.

THE course of competition practice for many years has served to emphasise the necessity of a new clause in the instructions to competitors. It is one which we think is badly needed for the protection of competitors and of promoters of competitions, and might run as follows:—"The assessor's award shall be final and binding, unless it can be clearly demonstrated that the award is not in accordance with the conditions laid down, in which case the decision arrived at shall be set aside." We believe the introduction of such a clause would do away with the mistakes which so frequently occur. We have known a competition in which the accommodation to be provided was to be placed in three separate blocks, and in which the award was made in favour of a design in which the whole of the accommodation was planned in one block; we have heard of competitions for schools which were to be on one floor in which an award was made in favour of a two-storied design; of a case in which a hall of a given area was to be provided on a limited site, and where the author of the design placed first only provided a hall of two-thirds of the area stipulated for. It is totally beside the mark to say in such cases that the best design has been chosen—though this may, in some cases, be true; the point is that competitors are not treated fairly in the matter, and it is always within an assessor's power to omit clauses which he believes will fetter his choice. There is no hardship to anyone concerned in such a method of procedure, but there is a hardship in a system which leads to the perpetration of injustice, however excellent the assessor's intentions may be. As to good intentions, we may remind our readers that even Hell is said to be paved with them!

Architects' Fees.

AN interesting discussion has taken place at a meeting of the Kent County Council as to whether their architect should be a "whole time man," a councillor pointing out that when £600 a year was paid to an architect he should be a "whole-timer"; he also considered that the County Surveyor should be the head of all works within the County, and the architect subordinate to him. Another councillor stated that he did not think they would get a "whole-timer" at £600 who was anything like as good as the present architect, while a third speaker mentioned that accommodation for the mentally deficient would take up the official architect's time for some time to come, and would represent a saving to the Council of some thousands of pounds in fees. The vote on the resolution indicated a sharp cleavage of opinion, and the matter was referred to a special committee, who, we hope, will be governed in their conclusions by more common sense than appeared in the discussion. A return has been asked for by the Education Finance Committee at Macclesfield as to the amount of the fees paid to a certain firm of architects who had been employed as architects to various schools. If some of the local representatives on public bodies could once master the fact that the amount paid in fees is a very small economical factor compared with the quality of the work obtained, they would be on a surer basis; but the question of fees and salaries appears in most cases to exercise a hypnotic fascination which obscures larger issues, and public interests frequently suffer, including economy itself. A saving in percentage or salary, as the case may be, is dearly purchased if the capital sums involved in building are unwisely expended.

The Best Protection for Our National Art Treasures.

ALTHOUGH the public will doubtless be reassured on hearing that steps are being taken by the custodians of certain of our museums and picture galleries to protect their most precious treasures from destruction by aircraft, there is, perhaps, still some feeling of uneasiness as to whether like precautions are being taken by the custodians of all of them. This feeling may possibly be traced to the lack of any one central authority, such as a Ministry of Fine Arts, directly responsible to the country for the safety of its artistic treasures. At a crisis like this such an authority would be in a position to specify the objects worthy of special protection, to recommend the best methods of protecting them, and to see that these methods were promptly and uniformly adopted throughout the country. As it is at present each institution appears to be under separate and independent management. Considerable difference of opinion may be imagined to exist between the different custodians as to the necessity of taking any precautions at all; and if so, how many, and also as to the best method of taking them. It is satisfactory to know that some of the best pictures of the National Gallery, the Elgin Marbles, and other treasures of the British Museum—not forgetting the Great Auk's egg at the Natural History Museum—are placed in safety; but it is quite possible that it has not even occurred to the guardians of one or the other of such buildings as the Tower of London, the Record Office, or Westminster Abbey that they are responsible for national treasures equally worthy of protection. Prompt and efficient action may have been taken in all such cases, but so far as we are aware it has not been announced. The existence of a Ministry of Fine Arts would remove all doubt on the matter. It would also remove any financial difficulties which might possibly cause hesitation or neglect in one case, or another. This, however, is not the time to press the claims of such a Ministry. The country is at the present moment devoting all its energies to organising the arts of war. May the time soon come when it will devote equal energy to organising the arts of peace.

Open-Air Cafés in London.

MR. VYE PARMINTER, in an evening paper, urges that London should follow Paris in the institution of open-air cafés and tea shops, and states that the spring and summer temperatures of the two cities do not materially differ, and that, while it would be impossible to institute them in the most crowded districts, they might be appropriately started in parts of the West End. We do not think the real difficulty is one of climate, but that it is more influenced by the fact that London has not yet been recognised quite so much in the light of a city mainly devoted, like Paris, to pleasure, leisure, and luxury. We know that this is, in fact, an error, since Paris subsequent to '70 has become one of the greatest business cities in Europe, while Americans are now said frequently to prefer London; but, still, the impression lingers. We expect another contributory cause is the operation of our licensing laws, which are unlike those of the Continent, where the café appeals to all classes, and there is no division between licensed and unlicensed premises. On the Continent, too, every meal is duly honoured; here many only snatch a hasty meal between breakfast and dinner, and dining out is a habit of the wealthier classes rather than a habit of the Londoner. We should like to see the open-air café here, but at the same time we doubt whether for the reasons we have referred to it would be a success. Many things can be transported from one country to another, but national temperament is one which cannot be, and it is probably this as much as the Straits of Dover which separates England from the Continent.

Designers and Trade.

A PAPER was read on the 17th ult. at the Royal Society of Arts by Mr. Arthur Wilcock on "The Decorative Textile Industries and the Designer's Relation Thereto." The audience was asked to remember that the existence of an industry is maintained by the public, and even the trade designer, as distinguished from the designer with a mission, produced work which deserved a place in posterity. William Morris could afford to be independent of existing trade conditions, and if the trade designer had the same opportunity and means many artists would be produced to-day of the same ability. If Morris had been dependent on the caprice of trade and without other means of livelihood his great gifts would have been lost to the public. All that the trade designer could expect was to be recognised by a few trade experts and other designers. What he wanted was not only to be a designer but also a man of the world. His present condition was due to the fact that there was an over-supply of designers living on industries which were over-producing themselves. Modern art training was condemned; it professed to train men to be creative artists and then turned them into blind alleys. Our textile industries still bought the bulk of their designs in Paris, while Germany had been supplying the great wallpaper combine with one-third of its designs; our best draughtsmen were imported from France, our best engravers from Alsace. The designer must link up with trade and get to know its laudable aims. We think these criticisms are well founded in the main. The complexity of modern life, the growth of civilisation and wealth, are more and more tending to throw power into the hands of the able organiser, and the organiser is rarely if ever an artist. It is unfortunately true that the average man will always want to get what he needs with the minimum of thought and trouble, and it is organisation which alone will save him the necessity of taking trouble. And at the back of all organisation is the faculty of being able to place one's self in the position of some one else and to exercise the objective faculties rather than the subjective ones which are prominent in most artistic natures.

Swansea Housing.

SWANSEA, like other provincial towns, has a large housing scheme in hand entitled the Town Hill Housing Scheme, and has been debating whether the proposal is to be carried out municipally, or, on the other hand, whether the houses should be erected by contractors, or whether the whole scheme should remain in abeyance for the present. The advocates of the last policy point to the enormous expenditure necessary in connection with the adequate drainage of the borough, and the further expenditure which will result from the extension of the town's boundaries, which, it is believed, will be carried out in the near future. It appears to be accepted that the houses cannot be built at contract prices and let at rentals which will cover those prices, and at the same time be low enough for the working classes; and it is urged that the expense of building might be saved in part if a more suitable site were selected. Swansea is a town to which Nature has been prodigal and man unkind; and entering it from the East the visitor gets an impression of the infernal regions after passing through some miles of smoke and squalor. The unfavourable impression is not removed by the nearer contemplation of a town in which every conceivable architectural mistake appears to have been perpetrated, and in which mingled vulgarity and squalor hold sway. Yet it is an ideal site in the bend of a fine coast-line backed by hills and rising in terraces above the water-line. The municipality hold unusually large estates, which, properly laid out, should have given character and charm to the town; but, unfortunately, in the past art and Swansea have never made acquaintance. No town in the United Kingdom afforded such opportunities to the town planner and lover of beauty, and in no town can want of system be seen more completely displayed. We hope that what is to be done in the future may in part redeem the faults of the past; but we do not think the city fathers will find they have saved money by deferring their housing scheme.

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FINSBURY-SQUARE (1777-1791).

WITHIN the next few years the north side of Finsbury-square will be demolished, and, although it is unfair to predict the style of building to take the place of the present range of houses, recent events in this district have led one to be pessimistic.

George Dance the younger, who succeeded to his father's position as Architect to the Corporation of the City of London, had an extensive private practice, not only in the metropolis, but in the country. In this regard he had for his assistant one James Peacock—1735-1814—who for forty-five years worked in the Office of Works, at the Guildhall, under Dance. His chief design was the formation of Finsbury-square, and he appears to have built No. 17 for his private residence. The other works attributed to Peacock are: The Mines Royal, Dowgate-hill, in the King's Collection, British Museum; the first Stock Exchange, Capel-court, a structure following Dance's teaching; and he restored and preserved the Church of St. Stephen's, Walbrook. He was buried in the cemetery of St. Luke's Church, Old-street, and a short notice of his career appeared in the *Gentleman's Magazine*.

Reverting to the subject of the illustration (see page 216), we are confronted with an architectural composition of unusual interest. The masterly handling of Dance is more than evident; the grouping is arranged as two dominating masses connected by a lengthy range of single houses; further analysis shows that the designer's chief object was to give importance to each separate house by forming the entrance under a grouping of two pilasters. The repetition of these pylonic features served the double purpose—first, of divisions between the houses, and, second, of architectural incidents linking the primary masses. Attention should be directed to the delicacy of the ornament, to the exquisite proportion of the parts, and the subtle sense of composition everywhere displayed. One so often hears such work described as being of "Adam character" or in "Adam taste." Those who dismiss late eighteenth-century buildings in such terms are ignorant of the works of Sir Robert Taylor, James Paine, and Thomas Leverton. In fact, it is surprising how few really comprehend the true meaning of refinement. The photograph shows some of the alterations made during the past decade, and a better contrast in the taste of two centuries could scarcely be offered.

THE BUILDER OF WESTMINSTER HALL ROOF:

AN ACCOUNT OF HUGH HERLAND, MASTER CARPENTER.

To Hugh Herland, as the builder of the finest existing piece of English carpentry, namely, the beautiful hammerbeam roof of Westminster Hall, may be fitly given the title of England's greatest carpenter. His name appears from time to time in the public records of England for a space of forty-five years, from 1360 to 1405. Probably of French descent—the name Herland still survives in France—the family had settled in England for some time and Hugh was not the first Herland to become a King's Master Carpenter, for on the first appearance of his name in the Patent Rolls he is associated with William Herland.

William Herland may be traced back to June 30, 1350, when an entry in the Patent Rolls runs as follows:—

"Appointment of Master William de Hurle and William de Herland to take carpenters, stone masons and other workmen as required for some works to be done in the wood of Beumes for the King's Manor of Eltham and his manor and castle of Windsore and to put them to work at his wages as he has enjoined them more fully."

By Bill of Treasurer.

In 1352. In the St. Stephens' Chapel Accounts:—

"Received by the hands of William Herland, carpenter, on account of making the stalls for the said chapel, £10."

In the same year on the dates August 8, 22, and September 12, that:—

"William Herland Carpenter working on stalls for his weekly wage 4/8d."

On June 6, 1358 in the Patent Rolls:—

"Appointment of John de Tidolsye to have repairs carried out in some houses within the King's castle of Haddeleye by view and disposition of Master *William de Herland* appointment of him also to take necessary workmen, etc."

On July 10, 1359, in Rymers Fodeora, West Roll 111/2, 1251, we find a

"Commission to William Herland—John Berholte and John Havering to provide 50 carpenters at Sandwich by August 15th."

In 1360 in the "Close Rolls" we find that William had been in pecuniary difficulties, for on July 14:—

"To the treasurer and the Barons of the exchequer order to cause William de Herland to be discharged at the exchequer of a sum of £23 3s. 3¾d. provided that he answer for the remaining £20 as for his industry about making of stalls in the King's chapel of Westminster, the sale of the wood of Reyndon and of the lop and crop of divers Oaks brought for the King's use and by him sold, the King has pardoned William of the sum aforesaid of the £43 3s. 3¾d. remaining of money by him received about the work and sales aforesaid."

In 1360 we come to the first mention of Hugh Herland, for on August 16 it is stated in the Patent Rolls:—

"Appointment of William Herland carpenter and Hugh Herland to take carpenters for the King's works in the Palace of Westminster, the Tower of London and elsewhere and to put them in the said works to stay therein at his wages during his pleasure."

In 1364, on March 3, the following grant is made in the Patent Rolls:—

"Grant during pleasure to Hugh Herland one of the King's carpenters of 8d. per day for his wages, by the hands of the Clerk of the King's works in the Palace of Westminster and the Tower of London."

Hugh was evidently rising in the world, for we find in 1366, October 10, in the Patent Rolls that a

"Grant for life or until other order to Hugh Herland one of the King's carpenters for long service, of 10 marks yearly at the exchequer."

By Privy Seal.

On June 7 in 1367 William Herland was appointed together with Stephen Scarlett as surveyors and controllers of the manor of Retherhythe, and in the Fabric Rolls of Rochester, Castle, 1367–8–9, we find that William Herland was paid 13s. 4d. for four little brass wheels bought of him to put in the hoisting engines for drawing up stones and timber.

In the Issue Roll of Thomas de Brantynham, Bishop of Exeter, High Treasurer of England.

1371. 44 Ed. III.:—

"To Hugh Herland one of the King's carters (?) to whom the Lord the King by his letters patent granted 10 marks yearly to be received ——. In money delivered to him in discharge of the 5 marks payable to him, £3 6s. 8d."

Again,

"In money delivered to him for half a year's payment, £3 6s. 8d."

So his 10 marks were worth £6 13s. 4d.

About 1375 or so William Herland died, for it is written, in the Calender of the Wills of the Courts of Husting (City of London), Roll 103:—

"Herlond (William) Carpenter to be buried in the Church of St. Peter the less near Pauls Wharf before the image of St. Katherine in St. Mary's Chapel, Bequests to the said church and ministers therein and to the old works of St. Paul namely the Chapel of St. John the Baptist near the north dore. To Agnes his wife he leaves his tenement in the parish of St. Peters aforesaid and a tenement near la Dragonn at Douegate in the parish of St. Michael de Paternoster cherche in the Riole for life she to sell the reversion if she can immediately after his decease and devote the proceeds to pious uses."

Dated London, July 6, 1375.

As Hugh is not mentioned in this will it would seem to point to the fact that William was not his father, while still he may have been a relation.

The next entry is interesting from the fact of it being an early instance of workmen's compensation.

1378. March 6. Patent Rolls:—

"The like in favour of Richard de Bonewell a carpenter maimed in the late reign, at the palace of Westminster of Letters patent dated March 12th 49. Ed. III. being an exemplification of Letters patent casually lost dated 10th April 31 Ed. III. being a grant to him for life of 1½d. daily at the exchequer."

Hugh Herland.

1378. March 6. Patent Rolls:—

"The like in favour of Hugh Herland whom the King has retained of Letters Patent dated October 10th 40 Ed. III. being a like grant to him to ten marks yearly at the exchequer."

"Vacated by surrender and cancelled because by Letters Patent 28th April. 14 Richard II."

He was granted the annuity out of the feeform of the City of Winchester.

By this time Hugh had become more than a mere carpenter, for we find that on May 14, 1378, Patent Rolls:—

"Appointment until All Saints of Master William de Basynges master of the Hospital of St. Mary Strode as chief surveyor and clerk of the works at the King's castle of Rochester so that they be done by the survey and control of Master Hugh Herland carpenter. Wages 12d. daily."

A year later, on March 17, 1379, the above appointment is renewed under the same terms for another year.

On March 24, 1379. Patent Rolls:—

"Appointment of Hugh Herland as one of the King's Master carpenters during pleasure with 12d. daily wages and a winter robe yearly or a sum equivalent thereto."

By Privy Seal.

In 1380, on August 2:—

"The reappointment of William de Basynges, who now undertakes works at the castle and park of Ledes as well as of the Rochester castle by the survey and control of Hugh Herland carpenter."

In 1381, on March 14, Hugh Herland has to do a bit of press-gang business, for in the Patent Rolls we find:—

"The like of Richard Swift and Hugh Herland to take 50 carpenters without the fee of the church, in the city and suburbs of London and the Counties of Kent Essex and Middlesex and deliver them to William Lakenghethe sergeant at arms for the King's service in Brittany with Thomas, Earl of Buckingham."

An entry in the Patent Rolls on October 28, 1383, is interesting as it gives, while describing another place, the position of the house of William Herland. It mentions that:—

"A certain messuage and two shops with a quay in the parish of St. Benet at Wodewharf in the ward of Bayardes Castell London lying between the tenement of the Prior and convent of St. Bartholomew Smithfield on the west, the tenement lately held by Master William Herlond carpenter on the east, the highway called Tamestrete on the north and the Thames on the south."

The next grant puts Hugh's salary on a more permanent basis, and incidentally mentions that he is not so young as he was.

December 7, 1383. Patent Rolls:—

"Grant to Hugh Herland verging on old age of 12d. daily and a robe yearly in lieu of the grant hereof to him so long as he holds the office of one of the King's master carpenters which grant he has now surrendered."

By Signet Letter.

He is still surveying the Rochester job, for in the Patent Rolls for 1384 is

"A Writ of aid for Thomas Bromelegh Master of St. Mary's hospital Strode appointed chief surveyor and clerk of works at Rochester Castle which are to be executed by survey and control of Master Hugh Herland."

We now come to the appointments dealing with the remodelling of Westminster Hall.

On January 21, 1394. Patent Rolls:—

"Appointment of John Godmeston clerk to cause the great Hall to be repaired, taking the necessary masons, carpenters, and labourers wherefor, whenever found except in the fee of the church, with power to arrest and imprison contraiants until further order and also to take stone, timber, tiles and other materials for the same at the King's charges, and to sell branches, bark and other remnants of trees provided for the said hall, as well as the old timber from it and from an old bridge near the palace by view and testimony of the King's controller of the said works for the time being accounting for the moneys so received and receiving in that office wages and fees at the discretion of the Treasurer of England."

By Bill of Treasurer.

The next, on the same day, is:—

"Appointment of Hugh Herland, carpenter as controller of the aforesaid John Godmeston."

Which points to Herland being the person

responsible for the repairs and designer of the great roof; the next entry supports this contention, for on April 28, 1396, in the Patent Rolls :—

"Grant for life with the assent of the council to Hugh Herland, Keeper of the King's carpentry works, of a little house lying in the outer little ward of the Palace of Westminster near the house of the clerk of the works for keeping within it his tools (instrumenta) and for making *models* (formulas) and moulds for his carpentry works, which house was, by the late King's order delivered to him for that purpose thirty years ago."

By Privy Seal.

Again in the Exchequer Accounts (473 11):—

"That the accounts are subject to the survey and testimony of Master Hugh Herland."

Also that he is paid £39 15s. as Chief Carpenter and controller and then again in (473 13):—

"£36 11s. 6d. to Master Hugh Herland the King's chief carpenter."

Entered in the Patent Rolls on May 26, 1397, is the following :—

"Grant for life with the assent of the council to the King's esquire Hugh Herland, chief carpenter and controller and surveyor within the Palace of Westminster, the Tower of London, and elsewhere of £18 5s. 0d. a year at the exchequer in requital of his long good and gratuitous service."

And on October 17 of the same year in the Patent Rolls :—

"Grant to Master Hugh Herland the King's chief carpenter of all the croppings and coppices from the trees and timber brought and provided for the Hall within the Palace of Westminster and other of the King's works which lie cut and remaining in a wood near Kingston-upon-Thames."

This is interesting as showing one of the places from where the timber for the roof came. Another place was Pettelewode, county Sussex.

On August 10, 1398. Patent Rolls :—

"Appointment of the King's master carpenter Hugh Herlond, Hugh atte Fenn, John de Beyton, William Oxeyene, Robert atte Fenn and John de Cleye to take carpenters and other workmen and labourers for the construction of the new harbour at Great Yarmouth and the materials and carriage thereof."

By Bill of Treasurer.

On November 10, 1399, we find the re-appointment under the new King :—

"Appointment of John Godmanston, etc."

"Appointment of Hugh Herland to control the repair and purveyance and the payments made by the said John, and to testify on his account at the Exchequer."

And on November 19 of the same year :—

"Inspeximus and confirmation to Hugh Herland of the following :

1. Letters pat. dated 28th April 14 Rich. II. granting to him 10 marks yearly.

2. Letters pat. 7th Dec. 7 Rich. II. granting to him for life 12d. daily.

3. Letters pat. dated 26th May 20 Rich. II. granting to him for life £18 5s. yearly."

So that Hugh Herland's salary beyond his perquisites amounted to £43 3s. 4d. yearly together with a robe of the King's esquires, roughly speaking about £520 per annum at present values.

On November 18, 1400, in the Patent Rolls the entry occurs :—

"Commission to William Lovenay, Richard Kays' sergeant at arms and Hugh Herland to enquire into the report that certain men of the town of Kingston on Thames lately appointed by Richard II. to take divers customs for the repairs of the bridge of the town from merchants passing by the bridge, have themselves received divers sums of money and retained the same for their own use and to collect these sums and expend them on the repair of the bridge."

On January 12, 1405, the last reference is made to Hugh Herland :—

"Grant for life to the King's servant William Toutmond in lieu of a grant to Hugh Herland by letters patent of Richard the second confirmed by the King; surrendered; of the office of chief carpenter disposer and surveyor of the King's works within the Palace of Westminster, the Tower of London and elsewhere receiving for his wages 12d. daily at the exchequer with a winter robe of the suit of the esquires of the household at the hands of the keeper of the great wardrobe or a yearly sum for it."

Thus we lose sight of the man whose work remains a monument of fine proportion, forming the high-water mark of English carpentry.

LEICESTER AND LEICESTERSHIRE SOCIETY OF ARCHITECTS.

On the 12th ult. a meeting of this Society was held, when Mr. F. V. Pulsford read a paper entitled "The Architect and the Heating Problem, with Particular Reference to Heating by Steam or Water Vapour at or Below the Pressure of the Atmosphere." Mr. Pulsford commenced his paper by discussing the question of the position of the heating engineer, the terms of payment, and the best manner of testing the work, and then proceeded to say :—

"The chief disadvantages of heating by high pressure hot water are probably the pressure in the system constituting more or less danger and the high temperature of the heating surfaces. High pressure hot water gives the frost an opportunity for explosions and bursts, especially in schools and churches which are sometimes closed in winter for several days or even a week. The danger from frost is increased where a system of ventilation is in use. High pressure water heating was the subject of a patent by Perkins in 1831 and was known as "Heating by small bore pipes." I cannot give dates prior to 1887, but since that year to 1913 no less than sixty-three explosions, or approximately an average of three explosions annually, have been recorded; fifty-four of the cases were due to ice choking the pipes. The result of these continually recurring explosions have resulted in the Board of Trade recommending that "Although the danger is not so great as to require all systems of this kind to be replaced, great care is necessary in their management," but the Board of Trade "recommend these systems should be annually tested to 1 ton per square inch and carefully examined during such testing." Notwithstanding such recommendation the system, with all its dangers and disadvantages, has adherents.

A low pressure hot water system is also subject to frost-bite. It is also inelastic in so far as sudden changes in the temperature of the external air find no ready compensation for adjustment in such a system.

It is well known that water is slow to take up heat and the same law holds good in its disposal of it. In buildings of four or more floors the head of water on the system must be considerable; also the weight of water to be carried by the fabric is of no mean consideration.

In steam heating above the pressure of the atmosphere we also find high and low pressure systems. At least one objection is as common to a high pressure steam heating system, say 50 lb. per square inch, as to a high pressure hot water system. Excessive temperature of the heating surfaces with consequent dryness of the air, in addition to an element of danger due to a burst, to which we may add the noise from air and water hammer.

Low pressure steam or gravity systems have not the equivalent objections as regards high temperature of the heating surfaces as high pressure systems, although the temperature is higher than is conducive to good health. In such a system we are again confronted with those knocks and bangs which denote the noise between steam and water in conflict. The odour of escaping decomposed air is also an objectionable feature.

Cast Iron Sectional Boilers.—The advent of this type of boiler has given a considerable impetus to low pressure hot water heating and the heating trade generally. It has brought into being competitors who rely more particularly upon the boiler makers' rating than their own knowledge of boilers, their properties and possibilities, for particular situations. Cast-iron sectional boilers have limitations, as I will endeavour to show. A hot water heating boiler exploded in November with rather destructive results. It was of the cast-iron sectional type. The damage caused was about £1,000. The cause attributed by the Commissioners of the Board of Trade was excessive pressure owing to a safety valve being of insufficient area to relieve the steam generated. Owners fined £75.

Three other failures occurred in the Manchester area alone. Two of these boilers were generating steam and failed through lack of water. The other failed by leakage of gas into the basement from the boiler. This boiler was blown up from without.

These explosions have occurred in districts where water is abnormally soft. In areas where the water is "hard," that is liable to deposit calcium salts on the water being heated, the danger is more notable, so much so that I venture to state that before determining the type of boiler to be used the first necessity is to ascertain the properties of the water available. If the water has 10 per cent. hardness do not be influenced to install a boiler of this type. It may be cheap at first, but the trouble must come with its attendant expense. Remember the chief point of deposit will be over the hottest part of the boiler in all types of sectional boilers—the most inaccessible place.

Heating by means of exhaust steam from non-condensing engines has been common practice for many years. Circulation has been effected by means of throttling the exhaust pipe—that is inserting in the relief main a relief or back pressure valve, weighted to relieve at, say, 5 lb. per square inch more or less.

This method has the merit of economy in so far as it has often been possible to heat a building by such method, thereby conserving the coal which would otherwise have been burnt to supply the requisite heat to an independent gravity steam or hot water installation. The economy is, of course, less the loss on the engine due to excessive back pressure. This method had and still has disadvantages. It increases the back pressure on the engine; the hot water of condensation is not fully recovered.

Now it was left to an American named Paul to devise a system whereby exhaust steam from non-condensing engines could be circulated at or below the pressure of the atmosphere."

The Paul and Webster systems of heating were then described, the speaker going on to say :—

"In the year 1901 Mr. Nesbit devised a system whereby the thermostatic valve at the outlet or condenser end of the radiator was discarded and a thermostatic valve, for the first time, inserted at the inlet of the radiator or heating element, obtaining thereby not an intermittent but an irrevocable vacuum within the radiator itself. The orginal experiments were conducted under my supervision.

The principle of the "Nuvacuumette" system of vapour heating is unique. By it it is possible to obtain within a radiator a temperature not exceeding 180 deg. Fahr., using steam or water vapour as the heating medium. The system consists essentially of utilising exhaust steam from engines, pumps, or any auxiliaries using steam as motive power, not excluding the exhaust from the vacuum pump itself. After exhaust the steam is immediately cleansed from oil or grease preferably by the use of a "Nudeemen" grease and oil separator. The cleansed steam is then circulated throughout the heating system without back pressure; indeed, oftentimes with a low vacuum at the exhaust of the engine. This is accomplished in the following manner :—Suitably sized mains are conveyed to the various heating elements with correct proportioned return mains. Interposed between the radiators and at the inlet side thereof a thermostatic valve is fitted which is sensitive to increase or decrease of temperature. The whole of the return pipes or mains from the radiators are coupled direct to a vacuum pump without the interposition of any valve, so that the vacuum generated by the pump extends to within the radiator and is irrevocable, withdrawing from within the radiator itself all air and the water of condensation.

This feature of an irrevocable vacuum extending to within the radiator is the essential fundamental principle of the "Nuvacuumette" system, for by the extension of the vacuum to within the heating element itself the steam is rapidly circulated when the system is opened up for the day's duty. The heat is put on the radiators by opening a stop valve of the supply main which serves all the heating elements, no matter how remote—say, a half mile—the last radiator may be from the stop valve or inlet of the system. It will be understood that as all the return mains are open from the vacuum pump to the radiators, that the interior of the radiators are also open to the pump, and that between the main stop valve and the radiators there is no interposing member other than the thermostatic valve, normally open when cold; that the vacuum also extends to one face of the main stop valve. If I have made myself clear it will be further understood that immediately the main stop valve is opened there is a rush of steam into the vacuum in the supply main and through the heating units. The result is an increased velocity

of the steam, a wild race to the thermostatic valve, continued until the radiator is fully hot, requiring a few minutes only, when the themostatic valve operates and the supply of steam to the radiator is curtailed. Having followed me thus far, it will be easy to understand that the only impediment to the removal of accumulations of dirt in the system is the valve at the inlet to the radiator. As the supply mains to the radiators are of small diameter, usually of wrought-iron pipe, the walls of which are smooth and clean, the opportunity for dirt ever being in these mains is remote and practically negligible. There is, however, usually a considerable quantity of sand grains on the inside walls of the radiators, but, as there is no impediment on the condense or outlet end of the radiator to the passage of such deleterious matter, it passes over into the return mains and is intercepted by a fine mesh strainer located in the return main, in close proximity to the vacuum pump, where it is easily accessible and can be cleaned in a short time. The return water of condensation is discharged by the vacuum pump to a receiving vessel, usually a galvanised steel tank placed at high level, from which in some places the water of condensation automatically gravitates to the boiler to be re-evaporated and afterwards again circulated as vapour throughout the heating system. In cases where the boiler pressure is above 5 lb. or 10 lb. per square inch the water of condensation is delivered to the boiler by means of an ordinary boiler feed pump, which may be power driven, or if steam driven the exhaust steam may be used to reheat the boiler feed water, or it may be used in the heating system proper.

I think it must now be clear that the "Nuvacuumette" system is a bottle tight system—a boiler generating steam or a steam engine exhausting at one end—at the other end a vacuum pump pulling the steam through the heating system. Between these extremes is interposed the heating unit and a "Nuvacuumette" combined stop and thermostatic valve. The advantage of this combination is that all noise, such as air and water hammer, is obviated, the objectionable odour from decomposed air entering the heated apartment is overcome, a rapid circulation of the heating medium is secured, the temperature of the heating surfaces of the radiator need not be above 170 or 180 deg. Fahr., the whole of the installation being exhausted of the water of condensation the risk and expense consequent upon bursts from frost is absent, and every unit of heat generated by the coal is utilised in giving useful heat. The water of condensation, necessarily hot, is wholly recovered and re-evaporated, as the whole system is under a vacuum, leaks are usually from without to within.

Only the 'Nuvacuumette" patented system secures the whole of these results. I may add that I recently invented a valve by which it is now possible to cut, say, out of a twelve-section radiator, 75, 50, or 25 per cent. of the heating surface, so that if the temperature of the outside air is, say, 30 deg. Fahr., twelve sections can be giving off radiant heat; if 40 deg. outside the radiating surface can be reduced 50 per cent.; if 50 deg. outside the heating surface can be reduced, say, 75 per cent.

With regard to the economy available by the utilisation of exhaust steam, perhaps there is no more subtle means of loss than the hidden or latent heat which is the peculiar property of steam. With water at 32 deg. Fahr. it requires 180 units of sensible heat to raise the temperature of water to boiling point of 212 deg. Fahr., but a further supply of heat, viz., 966 units of heat are required to convert water with a temperature of 212 deg. Fahr. into steam at atmospheric pressure and at the same temperature, viz., 212 deg. Fahr. It will thus be understood that in exhaust steam there is a considerable amount of hidden or latent heat which may be conserved and re-used for those purposes which require heat, such for instance as the heating of factories, works, etc. Any surplus steam may be used for heating cold feed water to boiling point—not forgetting that every rise in temperature of 10 deg. Fahr. is equivalent to an economy in coal consumption of 1 per cent.; or for heating water which may be required for domestic, washing, scouring, or other such purposes as drying stoves, etc.

The "Nuvacuumette" system is specially designed to recover the latent or hidden heat from exhaust steam and the large economies effected wherever the system is installed are evidence of its success in this direction.

A particular feature of the "Nuvacuumette" system is the extremely small bore pipes which can be used, both for conveying vapour to, and the water of condensation and air from, the radiators. This advantage will doubtless appeal to the architectural profession as it does not interfere so much with their scheme of decoration as systems using large pipes. It is also a point at which economy is obtained in first cost or capital outlay.

Before I conclude I would invite attention to a further development of vapour heating remarkable in its properties for securing comfort and economy.

The automatic control of temperature of apartments warmed by artificial means is now an accomplished fact. Leicester has also been in the foreground in this achievement. The American "Powers" system and later the "Johnson" system, operating with compressed air, both had advantages, but lacked definite and permanent results. The "Nutomatic" system, born in our own borough, appears to have advantages over all others. First it operates by means of vacuum relayed from a thermostat to a steam control valve, which latter cuts out the steam supply in the main feeding the radiators. Vacuum lines have an advantage over compressed air lines, because the latter become more or less choked with water and the interior walls of the pipe lines become in time corroded and trouble ensues ultimately.

The object of the automatic control of temperature is first to prevent overheating the air. Under the best natural conditions that obtain the air we breathe is not absolutely pure. It is therefore essential that a heating system should not diminish the purity of the air more than is consistent with maintaining its vitalising properties. Overheated air is not only unpleasant and irritating, but is of course more or less a menace to health. As an example it may be assumed a heating installation has been designed to raise the internal temperature of the air to 60 deg. Fahr. when the external air is at a temperature of 32 deg. Fahr.—a rise of 28 deg. Fahr. If this rise of temperature is necessary in mid-winter a less rise will be ample in late autumn and spring. A system that will balance with nature is this essential. Not only does the "Nutomatic" system do this, but in doing so enhances comfort and achieves economy in fuel varying from 49 per cent. to 74 per cent., truly a remarkable result.

Used in conjunction with the "Nuvacuumette" system the "Nutomatic" system is comparatively inexpensive.

To those who are really interested I shall be glad to show an installation at work at Barkby Lane, where external and inter-temperatures are being daily automatically recorded, the only attention necessary being the winding of the clocks weekly and the exchange of recording charts at noon daily. The internal temperature chart is always a straight line at 65 deg. Fahr. (at which the thermostat is set), no matter how irregular the chart recording the external temperature may vary. These facts may be supplemented from other installations.

The percentage figures of saving I have given —49 per cent. to 74 per cent.—are not my own; they are taken from the daily automatic records of a "Nuvacuumette" and "Nutomatic" installation at the Glasgow University, and I submit are independent, conclusive, and convincing testimony of the utility and economy of an installation of heating on the combined "Nuvacuumette" and "Nutomatic" systems of "heating by steam or water vapour at or below the pressure of the atmosphere."

BOARD OF EDUCATION EXAMINATIONS.

The Board of Education have recently published in book-form the Lower and Higher Examination Papers set at the General Examinations in Science and Technology, held by them during 1914. The volume also contains the reports of the Examining Committees upon these examinations; and there is included in it the papers set for competitors for scholarships, exhibitions, and studentships under the Board's regulations for awards in science during 1914. In the second part of this volume are given the reports of the examining committees upon the general examinations. Good work appears to have been done, showing improvement on that of 1913. The price of this publication is ninepence.

THE CAMPAIGN AGAINST GERMAN TRADE.

A MEMORIAL, signed as under, and containing suggestions for a counter-attack upon German art industries, has been presented to Sir Hubert Llewellyn Smith, Permanent Secretary to the Board of Trade.

The Committee responsible for the memorial, consisting of workers in various industries affected by German competition, were received at the offices of the Board of Trade by Sir Hubert Llewellyn Smith, Sir Lewis Selby-Bigge (Permanent Secretary to the Board of Education) being also present. They were invited, as an initial step, to submit a collection of enemy products, which they have got together, with a view to an exhibition being held under the auspices of the Board of Trade.

The memorial points out that the remarkable expansion of German trade, achieved largely at the expense of our own, has resulted, not simply from the energetic exploitation of fresh markets, but also in a striking degree from the untiring efforts which the Germans have made to improve the quality of their work. During recent years the intelligent co-operation of artists, educationists, and manufacturers (assisted by such organisations as the Deutsche Werkbund) with the object of freeing their products from the stigma of "cheap and nasty," has resulted in a marked improvement in the higher grades of German manufactures.

Side by side with this there has been a widespread propaganda among the buying public, whereby the demand for higher standards in workmanship and design has been encouraged to keep pace with the supply. Stress is laid on the fact that the same educational co-operation which has been applied by the Germans, with such successful results, to their scientific manufactures (*e.g.*, aniline dyes) has lately been applied to their art industries also. The memorial gives instances of trades in which the success of their efforts has been most marked, and goes on to urge that this far-seeing policy of co-operation should be emulated in England as the only sound method of combating it. It is suggested that to this end the activities of certain public authorities should be more thoroughly co-ordinated, and that a vigorous campaign should be set on foot through the medium of the Press and elsewhere for directing and stimulating public interest in this important matter, which has so great a bearing upon our industrial welfare, both in the present and the future.

The object of the suggested exhibition would be to demonstrate the extent of this new German rivalry, the effects of which would have made themselves severely felt here in the near future.

Together with the memorial were sent two enclosures:—

(*a*) A short synopsis of a suggested campaign, taking pottery and porcelain as an example; (*b*) a note on lithography, prepared by an expert, showing the completeness with which the Germans have been able to establish themselves in the English market.

The following are the signatories:—

Lord Aberconway.
Sir Kenneth Anderson (Orient Line Steamships).
Frank Brangwyn, R.A., P.R.B.A.
Fred. V. Burridge (Principal, Central School of Arts and Crafts).
B. Fletcher (Principal, Leicester School of Art).
C. H. St. John Hornby (Messrs. W. H. Smith & Son).
John Marshall (Messrs. Marshall & Snelgrove).
H. E. Morgan (Controller, Messrs. W. H. Smith & Son).
James Morton ("Sundour" Fabrics, Carlisle).
Frank Pick (Underground Electric Railways).
H. Gordon Selfridge (Messrs. Selfridge & Co., Ltd.).
Frank Warner (Messrs. Warner & Sons, Silk Weavers).
H. G. Wells (Author)
Ambrose Heal, F. Ernest Jackson, J. H. Mason, H. H. Peach, Hamilton T. Smith, Harold Stabler } Committee.
Cecil C. Brewer, Hon. Sec., 6, Queen-square, Bloomsbury, W.C.

THE INSTITUTION OF CIVIL ENGINEERS.

At the meeting of the Institution on Tuesday, February 23, the members received an intimation that H.M. the King of the Belgians and also Admiral Lord Fisher of Kilverstone, First Sea Lord of the Admiralty, had consented to accept election as Honorary Members of the Institution. The election was effected forthwith by acclamation.

ARCHITECTURAL SOCIETIES.

Leeds and West Yorkshire Architectural Society.

A general meeting of this Society was held at the Leeds Institute, Cookridge-street, on February 18, when a paper on "Wren" was given by Mr. J. H. Farrar, A.R.C.A. (Lond.), illustrated with lantern slides. The President (Mr. G. Frederick Bowman) occupied the chair, and there was a good attendance of members.

The lecturer, in the course of his remarks, dealt rather upon Wren's personality and his place in history than the range and quality of his works. Members of the Wren family had served in spiritual and temporal offices to the Crown as early as 1800. Matthew Wren, Lord Bishop of Ely, and his brother Christopher, father of the immortal Sir Christopher, both suffered persecution at the hands of the Long Parliament, Bishop Matthew being confined in the Tower of London for eighteen years until the Restoration. It was for this same Matthew Wren, as President of Pembroke Hall, Cambridge, that Christopher carried out his first architectural work—the new chapel there. He was then over thirty years of age. Up to this time he had applied himself chiefly to scientific pursuits, having been Professor of Astronomy at Gresham College, London, and at the University of Oxford. He was skilled in mathematics and a prolific inventor. It was during the year of the Plague that Wren made his only visit to the Continent, when he journeyed to Paris to a Congress of Arts. Here he met Bernini, who was at work upon the Louvre, and Mansart and Perrot. After a stay of six months he returned to England, and in the following year the Great Fire swept away the mediæval town of London and presented to Wren the opportunity for the creation of a new and beautiful city. Unfortunately the parsimony and stupidity of those under whom he had to work prevented most of his dreams from complete realisation, but, despite his limitations, by skill and forethought he converted London from a stuffy, plague-ridden city of the Middle Ages to an airy, modern town of brick and stone.

The lecturer went on to analyse the details of Wren's great task, more particularly with regard to the controversy as to what was to be done with the gutted St. Paul's; how he triumphed eventually over his critics, and completed his new church within forty-five years from the date of the fire. Wren's last five years were spent in quiet retirement at his house near Hampton Court, where he died after a short illness at the age of ninety-one.

A vote of thanks was accorded to the lecturer on the motion of Mr. W. G. Smithson, A.R.I.B.A., seconded by Mr. J. C. Coombe, A.R.C.A., and carried.

At the conclusion of the lecture Mr. Bowman presented Mr. Farrar with a silver tea service from the members of the Sketching Club, on the occasion of his recent marriage.

Glasgow Technical College Architectural Craftsmen's Society.

The Glasgow Royal Technical College Architectural Craftsmen's Society held a meeting on the 26th ult., when Mr. R. W. Horn, A.R.I.B.A., of the City Engineer's Department, gave a paper on "Cheap Cottages." The lecturer showed how a comparatively narrow belt of land round the present area of Glasgow could be laid out so as to accommodate a very large population on the cottage principle. He drew comparisons between the cost of housing on the tenement as against the cottage system, and analysed the factors contributing to this difference. Mr. Horn then discussed the advantages and disadvantages of the English cottage, and pointed out reasons preventing its universal adoption in Scotland. He also suggested certain relaxation of the building regulations which might tend to foster the erection of cheap cottages north of the Tweed.

OBITUARY.

Mr. A. Marshall.

We regret to announce the death, on February 24, at Lockington, Derby, of Mr. Arthur Marshall, aged fifty-six years, of King-street, Nottingham. Mr. Marshall was elected an Associate of the Royal Institute of British Architects in 1882; he was President, 1901-2, of the Nottingham Architectural Society; and in September, 1901, of the International Engineering Congress at Glasgow. He was the author of "Specimens of Antique Carved Furniture and Wood-Carving"; and he made the photographic pictures for Mr. H. F. Tomalin's "Three Vagabonds in Friesland with a Yacht and a Camera," 1907.

Mr. Marshall's more important architectural works include the following:—In Nottingham, St. Augustine's R.C. Church; the new workhouse and infirmary, with chapel, at Bagthorpe, for which the designs, in which he was, we understand, assisted by Mr. Turner, were selected in competition—the sanatorium was added in 1906; his own residence at Chilwell in the environs, and two residences, "Fernleigh" and "Lentonhurst." In Wolverhampton, the new workhouse (at New Cross, Wednesfield, two miles distant), for which his designs were selected in competition, 1898; and the Wesleyan Church, Darlington-street, 1899. Extensions of the Newark Infirmary in Bowbridge-road, in competition, 1903-6, and of the Dudley Union, 1902-4; new workhouse, infirmary, and other buildings at Kingswinford; cottage homes and other premises at Norton (1902-4), and the workhouse at Wordsley (1906-7), at a cost of nearly £100,000, for the Stourbridge Union Poor Law Guardians; enlargement and alterations of Long Eaton Parish Church; large factory and schools at Heanor, Derbyshire (1902-3); the South African War Memorial in Beeston, Notts; extension of the workhouse, Hereford, 1901; and a house at Breaston, Derbyshire.

The Wolf and the Lamb (Eighteenth Century).

From "Tapestry Weaving in England," by W. G. Thomson.

BOOKS.

Tapestry Weaving in England. By W. G. THOMSON. (London: B. T. Batsford & Co. £1 10s.)

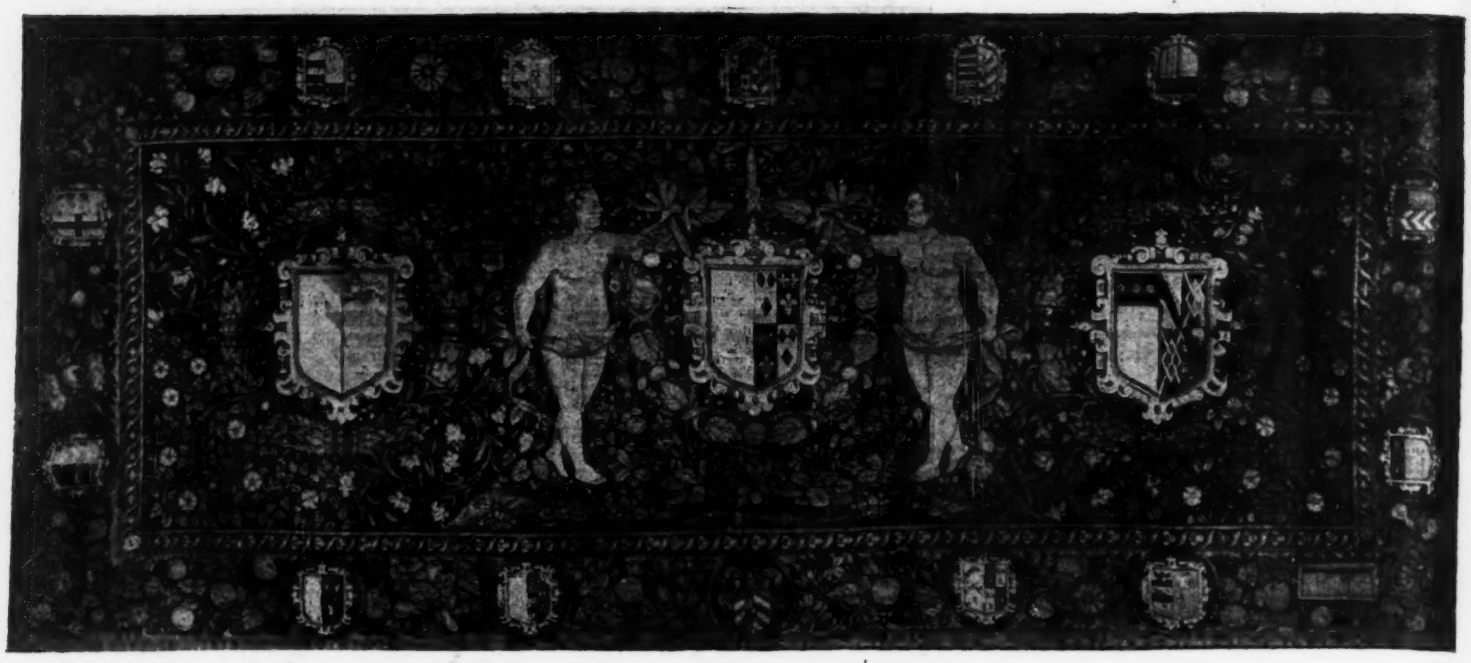
THIS is a companion volume to Mr. Lenygon's books on Decoration and Furniture, but, while they are the record of the art of a hundred years, the work describes the development of tapestry in England from the earliest times. The author states that, whereas Continental tapestry is described in exhaustive general histories, and also monographs on the work of particular towns there, no book has been written which deals exclusively with tapestry in England.

Tapestry was made in Egypt as far back as 1440 B.C., and was known to the Greeks four centuries B.C., as well as being woven in Western Europe from a very early period. In the fourteenth century there were three great centres of tapestry weaving—Arras, Paris, and a lesser one in London—but by 1422 the Parisian industry was practically dead, while that of Arras was at its height, but declined in its turn by the middle of the fifteenth century, and was finally suppressed when its inhabitants were evicted by Louis XI. of France.

During the fifteenth century many weavers emigrated from the Low Countries and France to Italy and founded workshops in Ferrara, Sienna, and other towns. Germans possessed many tapissiers but few workshops. The prosperity of the workshops of Tournay followed those of Arras, and it became the leading centre of tapestry weaving until the sixteenth century, when Brussels obtained the lead, and retained it for more than a century. During the seventeenth century large royal manufactories were established in England and France by the importation of Flemish weavers, and James I. founded a colony of expert weavers at Mortlake in 1607. The French workshops, such as the "Gobelins" and Beauvais, both founded in the reign of Louis XIV., and the assistance rendered to Aubusson and Tours by royal charters, enabled France to attain an eminence in tapestry weaving which has been maintained to the present day.

The book resolves itself into an interesting description of examples of English tapestry arranged in chronological order under the heads of the respective century from the earliest times to the end of the eighteenth century. The nineteenth-century revival at Windsor, which was shortlived, and Merton, which has already celebrated its jubilee, are referred to, but not illustrated.

From the illustrations we give the Lewkenor Armorial Tapestry, a fine piece of work of the seventeenth century, and an



The Lewkenor Armorial Tapestry: Chawton Manor.

From "Tapestry Weaving in England," by W. G. Thomson.

interesting example of eighteenth-century tapestry representing the Wolf and the Lamb, as they give some idea of the way in which this admirable work is illustrated. We may add that several of the larger of the sixty illustrations are well rendered in colour, and that the production of the book is eminently creditable to Messrs. Batsford.

Masonry as Applied to Civil Engineering. By F. NOEL TAYLOR, M.Inst.Mun.E. (London: Constable & Co., Ltd. 1915. 230 pages. 6s. net.)

As a general review of the various operations, both theoretical and practical, involved in the design and execution of masonry work this treatise is one which may be read with advantage by students of engineering and of building construction. Although the artistic treatment of masonry is not considered, much of the subject-matter applies equally to architectural and engineering practice. In illustration of this point we may refer particularly to the chapters on "Stones Used in Constructional Work," "Labour on Stones and General Remarks on Masonry," "Retaining Walls and Earth Pressures," "Monolithic and Block Concrete Construction," and "Shoring and Underpinning." The remainder of the work deals with dock, river, and canal walls, dams, bridges, and structures in the domain of engineering. Without importing complex mathematical treatment, the author has set forth clearly the theoretical considerations affecting the design of masonry construction, and as far as practicable the theoretical principles involved are illustrated by numerical examples and diagrams.

Lockwood's Builders', Architects', Contractors', and Engineers' Price-Book for 1915. Edited by FRANCIS T. W. MILLER, A.R.I.B.A. (London: Crosby Lockwood & Son, 7, Stationers' Hall-court, Ludgate-hill. 1915.)

OUR sympathy goes out to anyone who conscientiously attempts the revision of a builder's price-book under the conditions obtaining at present in the building trade; at the same time, we can offer our congratulations to such an individual that such a revision was not necessary last August, but could be postponed till some months later, when things were somewhat steadier. We are afraid that for this issue we cannot award the praise it has been our pleasure to give for some years past to this work for the thoroughness of the editor's work. True, the day-work rates have been increased in accordance with the rise in wages, but we can hardly agree with the statement in the Preface that "notwithstanding these facts the actual cost of building is not materially greater in this country."

When it is suggested in the Preface that "the prices of fir timber and deals have gone up 15 to 20 per cent.," and that labour has gone up nearly 10 per cent., it is somewhat of a shock to find the prices of carpenters' and joiners' work that have ruled for the past two years with few exceptions still remain the same. It is certain that for the present year, at least, a substantial increase in these trades must be looked for. After this year anything may happen.

Spon's Architects' and Builders' Pocket Price-Book. 1915. Edited by CLYDE YOUNG, F.R.I.B.A., and STANFORD M. BROOKS, F.R.I.B.A. Forty-second Edition. (London: E. & T. N. Spon, Ltd., 57, Haymarket.)

OUR remarks above apply with equal force to this work. Certainly in some trades, *e.g.*, the mason, some attempt has been made at revision, and in isolated cases in the other trades, but the revision has not been consistent. To give an example. The price of deals per Petrograd standard is shown with an increase of about 30 per cent. on the previous year. Labour in day-work shows an increase also; but when it deals with fir fixed complete the price remains the same. The same applies to flooring, but not to quite the same extent.

We are afraid the editors would find difficulty in inducing contractors to accept their day-work prices for labour. This is rather strange, as these items have been revised. A list of rates of wages is given. A note (page 1) states that the profit is assumed as 20 per cent., and then in the examples given about 13 per cent. has been added. What also seems strange to us is that a special supplement is given for decorators' work, consisting of a full schedule of prices contributed by the London Master Decorators' Association, in addition to that in the body of the work. The discrepancies between the two are appalling. We can only say that we think any builder would be happy to have this special supplement used as a basis for pricing his work.

Laxton's Builders' Price-Book for 1915. Originally compiled by WILLIAM LAXTON. Ninety-eighth Edition. (London: Printed and published by Kelly's Directories, Ltd., 182, 183, and 184, High Holborn, W.C.)

As we have already indicated, the position of the building trade owing to the world's war makes it extremely difficult to produce a work that can be used with any certainty as a standard of pricing. The markets under these conditions—and this applies more especially to timber—are so liable to variation that there is no guarantee that any prices now obtaining will in the course of even a few weeks remain the same. Laxton still retains the important position it first obtained, which, with a break of a few years, it has steadily held up to the present. There is an evident attempt to bring this edition up to date, although we were disappointed to find that, although 12½ per cent. had been added to the prime cost of timber, the prices for this item fixed remains the same. This really should not occur in a work of this importance.

An attempt has been made in the Preface to explain the position of affairs, but we should like an explanation of the very curious paragraph at the bottom of page xix. The puzzle of the adaptation of a price-book on page xxiv. is still perpetuated, as it has been with slight variation for some years. Still, taken as a whole, we must consider the present edition a worthy successor of those that have gone before, and as it increases in bulk it also increases in usefulness.

The uncertainty of the timber market is emphasised by the fact that in the three works here noticed the editors have all "shied" at attempting to revise the prices of carpenters' and joiners' work, while each has noted an increase in the raw material—one 15 to 20 per cent., the second 30 per cent., and the third 12½ per cent.

CORRESPONDENCE.

The British Academy of Arts in Rome.

SIR,—In approaching the question of the present position and prospects of the British Academy of Rome, which is the immediate subject of these remarks, it will be well to give some brief account of its past record, both because that is really necessary to understand the present situation and because this institution, which is now very near to the completion of the centenary, has a history which possesses a national value and interest.

We may take 1823 as the year when, under the auspices of George IV. the British Academy of Rome came into official existence, though it was actually founded, I believe, by a little group of artists a few years before that date, either in or about 1820; and three years later we find the English Ambassador at Naples, with the King's approval, giving £200 towards its support.

Subsequently to this Mr. Fraser, whose portrait is still preserved within the library of our Academy at Rome, gave a most precious and welcome donation of £1,000 towards buying a piece of land for the proposed building, and on two occasions the Royal Academy gave donations, as did also her Majesty the late Queen Victoria.

Altogether a capital of some £4,000 was thus put together, and, although no land, as had been proposed by Mr. Fraser, was then bought, because it was always hoped that a larger sum would have become available, the interest of this capital in hand was utilised to pay the rent of the studio hired by the Academy, the payment of models for the life class, the salary of the Secretary and that of the porter, and general expenses.

This was, in fact, the system which prevailed till about four years ago, when, using the same interest, we were able to double the available space of the Academy and to develop further possibilities of study for British students. Previous to this, as I remember well in the "eighties," the only class existing was that of the evening figure class, then held in the Via Sistina, where I had, as a member, the privilege

of studying, without any direct supervision save the kind advice and guidance of my own personal friends in Rome, the sculptors Macdonald, Cardwell, and Sir (then Mr.) Alfred Gilbert.

The position then was that British students who, like myself, were members of the Academy, were admitted free, and that a certain number of Italians also, to the number of eight in all, were allowed the free use of the class. Whatever criticism may be directed against this, as I venture to consider it, generous privilege permitted to a friendly nation, whose hospitality we enjoyed, it is in any case a fact that we have upon our books as students the names of such world-famed masters of modern art as Antonio Mancini, Aristide Sartorio, and others as well known within and without Italy. Among British artists we include Etty, Gibson, Eastlake, Cattermole, Knight, Armitage, Leighton, Poynter, Prinsep, Alma-Tadema, Holroyd, Lavery, Webb.

The present position of our Academy for the last four years, when the expansion to which I have just referred took place, is that the evening classes for figure study still continue, with largely increased numbers, as far as the British students are concerned, but that members of other nationalities using this particular class now contribute to its expenses. There are now also, in addition to this, morning classes in painting, perspective, and modelling, the first and last of these being classes for which fees are taken, the perspective being for British students only.

This year it is hoped, our funds permitting, to add to these classes one on anatomy; and I consider personally that if some form of lecture class on architecture, especially on the buildings of Rome, as well as on the great masters of Italian art, could be added it would be yet another step in the right direction.

From the point of view of art training, therefore, our Academy has more than doubled its field of usefulness in these last four years, and this fact is borne witness to by the largely increased attendance of students. From the financial point of view, which is so important, the position is that with the same capital as in previous years we are now getting immensely superior results, the required balance being made up by the fees willingly paid by students for the instruction offered, which I should like to say, in justice to those who are working for us so generously, is given freely.

In this connection I should like here to mention, besides the name of my friend Mr. Stephen Simpson, a brilliant young water-colour artist, that of our present Director, Professor Antonio Sciortino, who has for years past devoted himself both to the general work of the Academy, and more directly to the sculpture class, without any remuneration whatever.

Most of my readers in the *Builder* will already be acquainted with Professor Sciortino's recent success in the monument of Kieff in Russia, where he won an international competition for a monument which will cost some £20,000; a fact which is all the more satisfactory because as a native of Malta he is among our British sculptors.

Such, then, is the existing position of our Academy in Rome. It has its title, of which it is justly proud; it has a tradition of nearly 100 years of useful work, and the membership of many famous artists during that period; and it is doing a fine work—one might say even a splendid work—considering the limited means at its disposal.

What is to be its future?

Three years ago, at a general meeting of the British Academy (January 10, 1912), at which I could not myself be present (being then in England, as well as other members, including Professor Sciortino, who was in Russia, so that as a matter of fact I believe only fourteen members were then present), it was carried by a majority vote, but not unanimously, that we should treat with the London authorities to come to some agreement as to a possible amalgamation with the British School.

For this special purpose a Sub-Committee was appointed, consisting of five members—one of whom, Mr. Wyatt, is unfortunately no longer alive; but it is important to note that, in the opinion of the majority of members of the Academy, including those present at the meeting of 1912, the powers of this Committee then appointed were, in their view, limited to treating, but that any further decision should have been duly stated at a subsequent general meeting and then ratified.

This course is so obviously correct that I consider its propriety barely admits of discussion.

Instead of taking this course, which I still venture to consider the proper line to have been taken, the Committee decided the whole matter without any further reference to the wishes of members; and only in the general meeting called together in January of 1914 (that is almost precisely two years later) did they produce the Charter already in existence.

At the general meeting of the date just mentioned it had been proposed by Professor Sciortino that it is the decision of the members of the Academy here present that all motions passed up to this date should be null and void; the reason for this motion being that it was felt by members that the existing conditions as to amalgamation needed more careful revision.

This resolution was carried by a majority of thirty votes against four; the reply of the minority was to produce, for the first time, the Royal Charter, which obviously negatived the resolution.

The position, therefore, at present, is that a very large majority of members of the British Academy, with whom I am myself in considerable sympathy, are not in agreement with the arrangements made by this Sub-Committee; and this fact was very strongly accentuated at a subsequent general meeting, called for the special purpose (in February of 1914) of electing a Director—for which post Professor Sciortino was unanimously approved.

Although there has been in this matter a certain amount of regrettable friction, I believe I am here in a position to say that there is no desire on the part of either the members or Committee of our Academy to push matters to any kind of rupture; what they desire are the following points, which I am authorised here to state, and which appear to me eminently reasonable.

The members of the British Academy in Rome desire:—

(1) *To retain their title of "The British Academy of Arts in Rome," in distinction from that of "The British School," with the view of continuing their history and tradition.*

(2) *To continue the free evening class for all English artists and art students resident or sojourning in Rome, in some suitable and central position in accordance with the intention of their founders.*

(3) *To retain the management of their own Art section.*

(4) *To be consulted with regard to the plan of that part of the building which is to be reserved for the use of the British Academy of Arts in Rome.*

I have purposely avoided issues of a more personal nature which may have arisen at the recent general meetings, as well as the discussion of the suitability or accessibility of the "Valle Giulia" site, because I wished to confine myself to the present issue, which is clearly indicated in the above statement; and I will only now add that, from my own knowledge of the British Colony in Rome, which is most directly interested in this issue and thoroughly recognises and appreciates the work of our Academy in recent years, I believe that their hearty approval is here on the side of these very moderate claims of our members.

S. B.

Telephones in Buildings.

SIR,—I have read with more than interest the notice in the last issue of your journal respecting the communication on the above subject received from the Postmaster-General. Personally I feel that I have partly, if not wholly, been the means of bringing this about, although I was not successful in getting the G.P.O. to install the necessary cable in the new building I was engaged upon at the time.

In August, 1913, a letter was sent to the G.P.O. asking that wiring for telephone be put in in a house (costing about £1,400) before the walls were plastered, to save disturbing the "finishings" later. This obviously appears to anyone a simple matter. Some twenty letters, besides various forms, passed between the G.P.O. and myself, in addition to interviews, up to the end of October, 1913 (when the plastering and decorations were almost completed); at this point the Postmaster-General stated that "in the circumstances he is prepared to proceed with the necessary wiring of the house upon your undertaking to pay the cost incurred"! Needless to mention, my client did not avail himself of this generous offer.

The telephone was subsequently installed, at the usual charge, when the owner moved in, but there was the usual disturbance and disfigurement to the decorations, which is a point the Postmaster-General now wishes to avoid.

If my efforts failed to bring about the desired result in my own case, I trust they will have made it better for architects in future when "making adequate arrangements for the installation of telephones in buildings." It is also gratifying to see that the G.P.O. have given this important matter favourable consideration.

ARTHUR BENTLEY.

GENERAL NEWS.

Appointment.

At a recent meeting of the Rotherham Borough Council, the Mayor (Alderman P. Bancroft Coward) presiding, Mr. Thomas P. Colling, Borough Engineer and Surveyor of Mansfield, was appointed Borough Engineer, Surveyor, and Waterworks Engineer and Manager, in succession to Mr. E. B. Martin. Mr. Martin has been promoted to Salford.

The Architectural Association.

La Société des Architectes Diplômés par le Gouvernement, in virtue of a decision of their general Assembly Law, conferred upon the President of the Architectural Association the right to be a Corresponding Member during his term of office. Mr. Gerald C. Horsley, F.R.I.B.A., Past-President Architectural Association, has by the same decision been elected a Corresponding Member *à titre définitif*.

Middlesex County Council and Quantity Surveyors' Charges.

Under the existing arrangement quantity surveyors employed by the Middlesex County Council are paid 1¼ per cent. on contracts between £2,000 and £5,000, and 1½ per cent. for contracts below £2,000. For contracts above £5,000 1 per cent. is paid. The Council has now agreed that the remuneration to be paid to the quantity surveyors for any particular work shall in no case be less than that which would be payable in the case of works of smaller value, and that, in addition, a fixed charge of ½ per cent. on the building contract amount shall be paid for measuring up variations.

Westminster Hall Roof.

In the House of Commons, Mr. Beck, in reply to Mr. King, says that the total cost of the work now in progress on Westminster Hall roof is expected to be slightly over £60,000. The estimates for the work are as follows:—

Steel scaffold, erection, demolition, etc.	£3,750
Steel reinforcement	10,530
Ditto, labour	12,285
Timber and treatment with preservative, and slating	13,950
Ditto, labour	14,500
Clerk of works' salary (six years) and contingencies	5,000
Total	£60,015

The Rural Cottage.

The Board of Agriculture and Fisheries have issued a pamphlet drawing attention to the report of the Advisory Committee appointed to consider and advise upon plans, models, specifications, and methods of construction for rural cottages and outbuildings. The Committee consisted of Mr. Christopher Turnor (Chairman), Mr. Cecil Harmsworth, M.P., Mr. Raymond Unwin, Mr. Lawrence Weaver, and Mr. C. E. Varndell. The report of the Committee contains illustrations of twenty-three types of cottages for rural labourers. Four are for single cottages (including two bungalows), thirteen are for pairs, and six for blocks of four. The accommodation provided includes a living-room, scullery, larder, and three bedrooms. The designs from which the illustrations in the report are reduced are published separately on the scale of ½ in. to the foot. The price of each sheet is 1s., and the drawings may be obtained through any bookseller.

Material for Temporary Dwellings.

The *Gazzetta Ufficiale* (Rome) of February 12 publishes the text of regulations (in Italian) governing the construction of emergency dwellings as a result of the recent earthquake. These regulations may be consulted by United Kingdom firms interested at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

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ILLUSTRATIONS.

San Carlo Theatre, Naples.

THIS magnificent façade, an illustration of which was shown by Mr. A. E. Richardson in the course of his lecture before the Architectural Association on the 22nd ult.,* was added in the Napoleonic period to the front of the San Carlo Theatre. It was designed by Maderno, and constructed by Carasale. There is also a report that Niccolini was joint architect.

Metalwork, Westminster Cathedral.

THE illustrations, A, B, and C, are of two important pieces of metalwork designed by Mr. J. Marshall, the Architect to Westminster Cathedral, and carried out by the Bromsgrove Guild. They show the Monstrance Stand and the Corpus for the Crucifix on the High Altar. The guiding idea has been the subordination of any attempt at a dramatic result. To this end it has been the aim of the sculptor to discard superfluous or exaggerated planes, to be careful in the selection of folds, and to avoid undue muscular display. In addition the architect desired that the example of the work of the old-time sculptors, who were first of all goldsmiths conversant with all the various processes requisite to bring their work up to a consistent metallic quality, should be studied. This procedure was intended to apply to the making of the thing itself. With regard to the abstract ideal, the thought pervading the Corpus is that of the agony disappearing in the divine compassion for humanity, and in the Monstrance the happy confidence and trust of the Child in the promise made.

St. Peter's Church, Bristol.

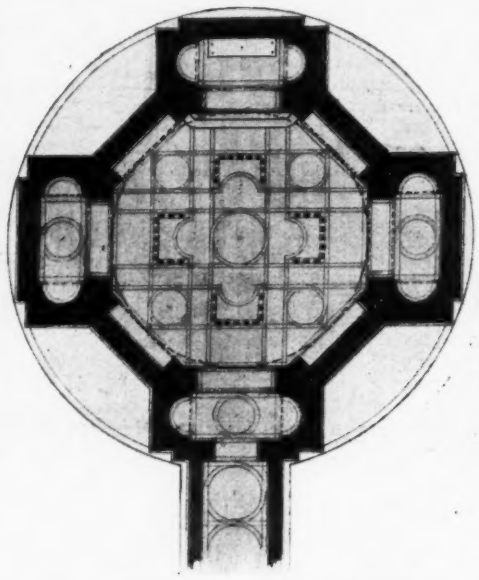
ST. PETER'S CHURCH, Bristol, is a large city church of late fourteenth-century date of simple character. In the south aisle are two fine monuments of the sixteenth century, and the altar piece is of the eighteenth century. When a few years ago the question of replacing the screens of the chancel was considered it was felt that with these late fittings the same feeling should pervade the new work. This idea has been carried out, and the works consist of the rood screen with a loft carried by vaulted coving, having the heads of the divisions filled with scroll work bearing the arms of the chief benefactors; a screen across the north aisle decorated with the arms of the late Bishop and carrying a bridge from the original rood stairs to the new loft; screens on either side of the chancel of similar but simpler design; and the restoration of the little chapel of St. Katherine on the north. The sixteenth-century monument over the altar is in its original position.

The architect entrusted with the work was Mr. Harold Brakspear, F.S.A., of Corsham, and the contractor for all the oak work was Mr. R. Rudman, of Chippenham.

* "The Architectural Spirit of the Age." See our last issue, page 193.

Proposed Chapel for Sir Mark Sykes, Bart.

THE structure was intended to be of brick and reinforced concrete, faced externally with unglazed ceramic ware of different subdued hues and of granulated texture. Chases were



Proposed Chapel for Sir Mark Sykes, Bt., M.P.: Plan through Base.

Messrs. W. F. Harber and George T. Power, Joint Architects.

to be left in the interior for bonding in solid marble bands to hold panels of marble covering the major portion of surface, with some modelled panels cast in bronze. The floor was to be of marble, and the remaining portions covered with glass mosaic. W. F. HARBER.

Priory Church, Nuneaton.

ST. MARY'S CHURCH at Nuneaton was begun to be raised from the ruins of the Fontevrault nunnery at that place early in the last century, and a section of the nave to an elaborate design was the result. In 1906 the chancel was rebuilt on its old lines, followed six years later by the completion of the rood screen.

The architect employed for this later work was Mr. Harold Brakspear, F.S.A., of Corsham, and the general contractors for the chancel, which cost over £3,000, were Messrs. Henry Willcock & Co., of Wolverhampton. The screen was worked by Mr. R. Rudman, of Chippenham.

MEETINGS.

MONDAY, MARCH 8.

Surveyors' Institution.—Adjourned discussion on the papers delivered by Mr. Isaac Dixon and Mr. E. H. N. Ryde on "The Report of the Land Enquiry Committee on Rating." 8 p.m.

Royal Sanitary Institute.—Mr. Edward Willis on "Building Materials." 7 p.m.

University Extension Lecture (at the Victoria and Albert Museum).—Mr. Banister Fletcher on "The English Home from Castle to Manor House." 4.30 p.m.

Incorporated Clerks of Works' Association (at Carpenters' Hall, London-wall). 7 p.m.

TUESDAY, MARCH 9.

Royal Sanitary Institute.—Mr. Edward Willis on "Building Sites, Construction, and Sanitary Planning." 7 p.m.

Institute of British Decorators.—Mr. Ronald G. Barker on "A Comparison between Simple and Elaborate Schemes of Colour for Domestic Decoration." 8 p.m.

Institution of Civil Engineers.—Sir Thomas Mason on "The Improvement of the River Clyde and Harbour of Glasgow, 1873-1914." 8 p.m.

WEDNESDAY, MARCH 10.

Carpenters' Company.—Mr. H. M. Fletcher on "Brick Buildings." 7.45 p.m.

Royal Society of Arts.—Mr. J. W. Gordon on "Patent Law Reform and the War." 8 p.m.

Royal Sanitary Institute.—Inspection and demonstration at London County Council Municipal Lodging-House, Kemble-street, Drury-lane. 3 p.m.

THURSDAY, MARCH 11.

Society of Architects.—Paper on "The Law Relating to the Remuneration of the Architect," by Mr. A. Montefiore Brice. 7.30 p.m.

Royal Sanitary Institute.—Mr. Edward Willis on "Ventilation and Warming." 7 p.m.

University Extension Lecture (at the British Museum).—Mr. Banister Fletcher on "Early Christian Buildings in Bethlehem." 4.30 p.m.

Society of Antiquaries.—Ordinary meeting. 8.30 p.m.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Viscount Peel, Chairman, presiding.

Tenders.—Tenders were received for the supply of tramway fittings, equipment, etc., for use in the Tramways Department, and for the supply of electric traction glow lamps for use in the Tramways Department.

Loan.—Sanction was given to the borrowing by the Islington Borough Council of £500 for electricity undertaking.

Eleventh Asylum—Disposal of Sewage.—In a Report submitted by the Asylums and Mental Deficiency Committee it was stated that provision has been made in the capital estimate for the erection and equipment of an eleventh asylum for the County of London for expenditure in connection with the disposal of sewage from the new asylum upon the sewage farm of the Epsom local authority. The Council is under agreement to contribute eleven-sixteenths of the cost of such work as the Epsom authority has to undertake in this connection. The probable amount of the contribution which has been indicated by the Epsom authority is £5,940.

Commercial-road East.—It was recommended by the Improvements Committee that the work of executing the necessary alteration to the tramway tracks in connection with the widening of Commercial-road East, at and near the Britannia Bridge, be carried out by direct employment of labour under the direction of the Improvements Committee.

Rate for Ensuing Financial Year.—The Chairman of the Finance Committee announced that, as far as could be seen at the present time, the Council's rate for the following financial year, commencing on April 1, would be as follows:—1s. 11¼d. for educational purposes—a decrease of 1d. in the pound; and for purposes other than education, 1s. 5¾d. for parishes outside the City and 1s. 3·3d. for parishes within the City, the former being the same as that for the financial year now closing.

FIFTY YEARS AGO.

Excessive Death-Rate of Manchester and Liverpool.

IN a recent number of the *Builder* attention was directed to the serious excess of the death-rates of these important towns. The deaths in Liverpool are given at 42 in 1,000; the mortality of London 30 in 1,000; so that the deaths in Liverpool are 12 in 1,000 more than occur in the metropolis. In Manchester the deaths are 40 in 1,000, or 10 in each 1,000 more than London. The deaths in certain healthy neighbourhoods are but 17 in 1,000; so that Liverpool is in excess 25 in each 1,000, and Manchester 23 in each 1,000. This waste of human life is monstrous, and ought to lead to the greatest care on the part of the health officers, for it is to be noticed that the death-rates of both Manchester and Liverpool have greatly increased since some illustrated papers were published in these pages descriptive of the first-named city. At that time the death-rate of Manchester was about 33 in the 1,000, and that of Liverpool about 35 in the 1,000.

[*** We give the above extract from the *Builder* of March 4, 1865.]

SHADWELL PARK.

The Corporation of the City of London resolved, at their meeting on February 18, to undertake the control, maintenance, and upkeep of the open space and playground of the King Edward VII. Memorial, Shadwell Park, at an estimated cost of £600 per annum. Messrs. Rendel, Palmer, & Tritton act as honorary engineers in the laying out of the site as a public park, and Mr. F. Palmer, C.I.E., made plans and estimates of the river-wall. Mr. Lutyens, A.R.A., is honorary adviser to the Committee in respect of the general scheme and its architectural features.

LEGAL SECTION.

NOTES ON CURRENT CASES.

Lancaster *v.* Burnley Corporation: Demolition Orders and Buildings Subsequently Adapted for Other Purposes than Habitation.

THE action of the Burnley Corporation in this case, which we discussed at some length in a previous issue, created at the time no small amount of hostile criticism. Nor will the feelings of dissatisfaction then manifested be altogether removed by the result of the appeal to the Courts, which now appears in the Law Reports.

As our readers will remember, the appellant, Mr. J. F. Lancaster, purchased on December 17, 1912, certain houses in Engine-court, Burnley, in respect of which a closing order had been made under sect. 17 of the Housing and Town Planning Act of 1909. No attempt was made by him to use them for human habitation, nor as we understand the matter was any suggestion made that the Burnley Corporation had acted in any way unfairly in condemning the houses as unfit for habitation. Up to this point there is no dispute. On May 10, 1913, however, rather less than five months after the purchase, Mr. Lancaster gave notice to the Corporation of his intention to convert the condemned houses into warehouses, and submitted plans of his proposed alterations for the Corporation's approval. These plans were disapproved on certain technical grounds as regards the projection of the buildings; but there does not appear to have been any radical defect in them, and it was not seriously disputed that with some slight modification they might have been made quite satisfactory. As a matter of fact on July 31, 1913, Mr. Lancaster deposited an amended plan meeting all the Corporation's previous objections.

Meanwhile on the same date the Corporation made a demolition order, requiring the removal of the buildings. On August 14 following they considered the amended plans, and disapproved them, not on their merits, but on the ground that they showed "an intention to retain and alter buildings in respect of which a demolition order had been made." On August 26 Mr. Lancaster appealed to the Local Government Board. In his notice of appeal he pointed out amongst other grounds of relief that if the buildings were rased to the ground the site was not suitable for residence, and could only be developed by the erection of mercantile buildings, and, further, that no town-planning scheme had been prepared by the Burnley Corporation reserving the area for habitation. It was contended therefore, and the contention is difficult to dispute, that the differences between Mr. Lancaster and the Burnley Corporation in fact and in truth resolved themselves into this. Both parties were at one as to the site being suitable for warehouses as proposed by Mr. Lancaster; both parties were technically at one as to the suitability of the proposed plans; but the Burnley Corporation demanded as a preliminary step that the houses comprised in their demolition order should be rased to the ground before the erection of the proposed warehouses was sanctioned. On the other hand, Mr. Lancaster's plans contemplated embodying portions of the old buildings in his reconstructive work. In a word, he proposed to convert rather than to rebuild, whilst the Corporation insisted on an entirely new building, lock, stock, and barrel, to use a metaphor of these martial times.

So far as this deduction from the evidence is correct the occurrence at first sight appeared but little better than a violent outbreak of Bumbledom. Be this, however, as it may, the Courts have now vindicated the action of the Town Council, though on technical grounds hardly affecting the real merits of the case.

The action of the Local Government Board when appealed to was somewhat remarkable. A local inquiry was held in the first place by one of the Board's inspectors. The contentions put forward by the Corporation were as follows:—That, no steps having been taken to render the houses fit for habitation within the time allotted by the Act, the Corporation had no option in the matter. Their subsequent duties, they contended, were merely administrative, and the demolition order followed as a matter of course on non-compliance with the order to fit the houses for habitation. Secondly, they alleged that the jurisdiction of the Local Government Board was appellate only, and that in its exercise all the Board were entitled to consider was whether the action of the Corporation was within the strict letter of the law or not. With their discretion the Local Government Board were not concerned. It is important to note that no suggestion was made on their behalf of any danger to the public health, or apprehended danger to the public health, from a continuance of the buildings in their present form. The Local Government Board declined to give any decision as regards the inquiry, but applied to the Courts for a decision, upon the following questions:—

(*a*) Whether, when a closing order has been made and the local authority are satisfied before demolition that there is no intention of again using the property closed for human habitation, and that from the alterations effected it cannot again be so used, the local authority are bound to proceed to demolition.

(*b*) Whether, on appeal to them under the provisions of the Act, the Local Government Board have power to quash or vary such order when made and to make such other order as they consider equitable.

On the case coming on for hearing, Counsel for the Corporation submitted that the policy of the Act of 1909, the Housing and Town Planning Act, was that a house in respect of which a closing order was once made must be put into such condition as the notice required or pulled down completely. No third course was permissible under the Act. If this contention was correct it was further submitted that the Local Government Board was in no better position than the Town Council, and had no power whatsoever to interfere with the Council's decison on appeal.

Lord Coleridge, in his judgment, referred to the wording of sect. 18 of the Housing and Town Planning Act, which, after enacting that where a closing order has remained operative for three months, states that the question of demolition shall be considered and notice given to the owner of the property of the day of hearing; and then proceeds as follows:—"If upon any such consideration the local authority are of opinion that the dwelling house has not been rendered fit for human habitation, and that the necessary steps are not being taken with all due diligence to render it so fit, or that the continuance of any building, being, or being part, of a dwelling house is a nuisance or dangerous or injurious to the health of the public, or of the inhabitants of the neighbouring dwelling houses, they *shall* order the demolition of the building.

As previously stated, no suggestion was made in this case that the continuance of the building was in any way dangerous to anybody or anything, but the clause is clearly alternative and Lord Coleridge's decision that the word *shall* renders it in either event imperative cannot be seriously challenged. In other words, it appears to be clear law that where a closing order is once made, unless the house is restored to fitness for human habitation, the further action of the Corporation becomes merely ministerial. All they are entitled to consider in cases such as this is whether the property has been rendered fit for human habitation, and whether the necessary steps to comply with their demands are being made with due diligence. If not, and in justice to the Burnley Corporation it must be admitted that here nothing of the kind had been or was being done, then the order for demolition goes as a matter of course without the Corporation having power to stay it.

On the second point the decision of the Court was more favourable to the property owner, in that it was laid down that, on appeal to the Local Government Board, it is open to the Board to do what they may think equitable in the way of varying or quashing an order. Mr. Justice Horridge and Mr. Justice Shearman concurred in this view, but Mr. Justice Horridge pointedly abstained from expressing any opinion as to whether the right to vary includes the right to suspend. The question put by the Board ought, he stated, to be answered succinctly and as follows:—"The Local Government Board have power, notwithstanding that the local authority may be bound to make a demolition order, to quash or vary such order if they consider it equitable to do so in the circumstances of the particular case."

On its main lines therefore the law is no longer doubtful. If a closing order is once made the property owner must comply with the requirements of the local authority in detail and in such manner that the property is no longer likely to be injurious to health. If he does not do this it is not the business of the local authority to listen to the why or wherefore, but to sternly order the property to be rased to the ground. *Delenda est Carthago* is the only decree the law permits them to make. The actual meaning of the word demolition was not, it is true, discussed by the Court, but that its meaning is of the extreme order and involves substantial destruction no one can doubt.

If, however, the property owner has other views for the property he may still appeal to the Local Government Board at very considerable expense to himself, and apparently that august body, though it is not quite clear whether they can suspend the fateful edict, are at any rate at liberty to quash or vary it in such manner as common sense requires. With a cynicism which is perhaps not altogether without its humorous side, section 18 of the Act rigorously excludes town councils from a like privilege.

It is to be hoped that in more peaceful times some one of our legislators will take the Housing and Town Planning Act seriously in hand with a more kindly regard both for the pocket of the property owner and the amount of discretion which may safely be allowed to our civic fathers as to repairing blunders once made.

Symonds *v.* King & Co.: Street Accidents to Builders' Men.

The decision in this case, reported in our issue of February 5 last, is an interesting confirmation of the former judgment of the Court of Appeal in the case of Sheldon *v.* Needham. Messrs. King & Co. are a firm of builders. The applicant Symonds was a workman in their employment. On the morning of April 9, 1914, Messrs. King & Co. were engaged in repairing some premises in Goswell-road. Some whitening required by them had not arrived, and after waiting until after breakfast, as the whitening was still undelivered, they sent Symonds and another man to a place about 100 yds. off across the Goswell-road to fetch some. In crossing the road Symonds was knocked down by a tramcar and seriously injured. That the accident happened in the course of the employment was not seriously disputed. The point taken on behalf of Messrs. King & Co. was that it did not arise out of the employment. The view taken by the Appeal Court favoured their contention. The Master of the Rolls, in refusing to allow Symonds compensation, quoted with approval as a test the dictum of his predecessor, Lord Collins, in one of the lightning cases, Andrew *v.* Failsworth Industrial Society (1904, 2 King's Bench, p. 32), where Lord Collins stated:—"If there is under particular circumstances in a particular vocation something appreciably and substantially beyond the ordinary normal risk which ordinary people run, and which is a necessary concomitant of the occupation the man is engaged in, then I am entitled to say that the extra danger to which the man is exposed is something arising out of his employment." This statement was approved by the Court in the previous case of Sheldon *v.* Needham already mentioned, where a charwoman who was sent out to post a letter slipped up on a piece of orange peel and injured herself; but was refused relief by the Court on the ground that employment as a charwoman did not expose one to any greater risk of slipping up upon orange peel than would be run by an ordinary person not so employed. Where anyone, however, is so placed as to be exposed by his employment to a greater risk in some particular way than ordinary persons

outside such employment, then, if an accident ensues by reason of such exposure, the law gives redress and holds the accident to have arisen out of the employment. If, however, the risk to which the injured person succumbs is common both to the employment and to persons outside it no redress will be given. The Master of the Rolls therefore held Symonds' claim to be an ordinary street accident, in no way arising out of the employment, and that the injured man was not therefore entitled to succeed in his claim under the Workmen's Compensation Act against his employers, the builders.

It must not, however, be assumed from this, and the earlier decision of Sheldon *v.* Needham, that every street accident is outside the Act. This is by no means the case. A coachman, a van driver, or a chauffeur would undoubtedly recover if injured in a street accident in the course of his employment. It would be held that constant employment in the streets necessarily exposed men of these classes to greater risks from street dangers than ordinary persons who only use the streets to go to their work and return from it. Indeed, this doctrine has been carried by the Courts to very great lengths. A carter who was run over after having descended from his cart to cross the road to get a glass of beer was held to have a claim under the Act, as well as a collector who slipped down the stairs of a building at which he had called in pursuance of his collecting duties. The *ratio decidendi* in both these cases was the same, *i.e.*, that the carter and collector ran greater risk from street dangers and stair dangers respectively than ordinary men. In the case of the carter it was held to be within the course of his business to take his refreshment on the way; hence his visit to obtain his glass of beer arose in the course of his employment. Then, on the second point, as it was the carter man's business to be on the streets it was decided that he was more exposed to street risks than other men by reason of his employment. It followed therefore from Lord Collins' dictum that the accident arose out of his employment.

In the collector's case it was similarly his constant duty to ascend and descend stairs in the course of his business in collecting. He was therefore held to be more exposed to the risk of stair accidents by reason of his employment than ordinary people would be, whose ascents and descents were of a more limited nature.

The true test in every case of this kind is the proposition laid down by Lord Collins; and a mere casual job in the streets will not satisfy the Courts that a street accident can be said to be a risk arising out of the employment although it may obviously have arisen in the course of it.

Leaver *v.* Girls' Public Day School Trust: Damages for Breach of Repairing Covenants.

This is an interesting case. The facts are reported in our issue of February 19 last. The defendants had been for some years tenants of a house at Brighton, which they occupied as a girls' school, No. 8, Norfolk-terrace. On September 29, 1910, they renewed their tenancy for a further period of three years. Just three days before the expiration of this further term the plaintiff Leaver bought the premises, intending to convert them into flats. At the same time he claimed from the defendants the cost of putting the premises into thorough repair on the termination of their three years' agreement in accordance with the usual stipulations in their agreement to that effect. There was, however, obviously no idea on the plaintiff's part of putting the building into any state of repair at all. His intention was to reconstitute the premises and relet them as flats. It is doubtful whether a single penny could have been legitimately spent in repairs, so far as they were repairs in accordance with the stipulations in the agreement, which would not have been absolutely and entirely wasted having regard to the changes involved in the intentions of the new owner, the plaintiff. A question then arose as to what damage the plaintiff had suffered by the tenant not having carried out the stipulations of the agreement to repair. The tenant admitted liability to the extent of £40, and the learned Referee found that this sum was sufficient to cover all liability. So far as the question was purely one of *quantum* we have no fault to find with this decision. If, however, the learned Referee attached any importance to the fact that it was the plaintiff's intention to wholly reconstruct the building, instead of using the money to effect repairs, we beg respectfully to differ from him. The plaintiff's total claim amounted to £159, and having regard to the fact that the damages were cut down to £40, it seems hard to escape from the conclusion that the late connection of the plaintiff with the property, and his expressed intention to deal with it in such a manner as to render any repairs useless, affected the judge's mind. It was admittedly open to the defendants previous to the actual determination of their tenancy to have said we will do the property up in accordance with our liability under the agreement, and that is all. We will, they could have said, refuse to pay you a pennypiece, and insist on our right to carry out the work required on the premises, knowing that it will be absolutely useless to you, the landlord. But this they did not do. They let their term run out without doing anything, and so translated their liability, for they had after the determination of their tenancy no further rights upon the premises, into a money claim. Was it then open to the learned Referee to diminish the damages by reason of the fact that the landlord, through a change of circumstances with which the tenant had nothing whatever to do, would in reality have suffered little or no loss by the non-repair of the premises, we think not. The proper legal measure of damage was the amount which it would cost to put the school into the condition stipulated for under the agreement. Late as his interest was, the plaintiff stood in the landlord's shoes, and whether he preferred to have the house done up with the money due to him or to use it for other purposes was not with submission a question which should have been allowed to affect the learned Referee's mind, as the law now stands. If a salesman refuses to deliver goods the measure of damages is ascertained by the market price at the time of such failure to deliver, whether the buyer purchases other goods or not; and whether a landlord who has a monetary claim against his tenant intends to spend the money on the premises or not, by parity of reasoning, is not a matter which should be allowed to affect the proper amount of the claim. So far therefore as the learned Referee reduced the damages payable by the tenant on this account, we beg respectfully to differ from his decision.

LAW REPORTS.

KING'S BENCH DIVISION.

(Before Mr. Justice SCRUTTON.)

Litigation with Regard to a Party Wall: Spiers & Sons, Ltd. *v.* Frederick William Troup.

MR. JUSTICE SCRUTTON delivered judgment in this case on February 22. The facts sufficiently appear from the following judgment:—

His Lordship said the claim was for the due proportion, said to be half, of the expenses of pulling down and rebuilding the party wall between Nos. 36 and 37, Hatton-garden, London. It was agreed that the sole question he had to deal with was liability. One Harris was freeholder of Nos. 36 and 37, Hatton-garden. As to No. 37, he had entered into a building agreement of May 20, 1912, with the plaintiffs, Messrs. Spiers & Sons, who were to erect certain new buildings on the site, and, when these buildings were finished, to receive a ninety-nine years' lease from Harris, from March, 1912. Nothing in the agreement was to amount to an actual demise of the premises. As to No. 36, Harris had leased to the defendant, Mr. Troup, who had, by an agreement dated September 20, 1911, granted a yearly tenancy to one Richardson. Messrs. Spiers's surveyor, on March 26, 1912, gave Messrs. Troup & Richardson a party wall notice that after two months they intended rebuilding the party structure, if survey showed that course to be desirable. At this time their building agreement had not been signed, and they were not in occupation at No. 37. They expected to be when the two months' notice expired. Mr. Troup gave notice of appointment of surveyor on April 3, and the two surveyors appointed Mr. Chatfeild Clarke their umpire. After the signature of the building agreement of May 20, Messrs. Spiers & Sons began the removal of works which exposed the party wall. The old building was 200 years old, and the material of the wall had lost most of its adhesive qualities and become little more than dusty rubbish. The District Surveyor cast an unfavourable eye on it. Messrs. Troup & Richardson desired to throw the responsibility on Mr. Harris. The District Surveyor had to deal with a clearly dangerous wall. He condemned it on June 14, and served a dangerous wall notice on all concerned. Nothing was done. The magistrate's order was dated July 25, "to take down the wall where the brickwork was out of plumb, cracked, loose, and otherwise defective," and was made under the London Building Act, 1894, and the London Building Act, 1894, Amendment Act, 1898. This involved the demolition of the whole party wall. The plaintiffs, as the defendant would do nothing, pulled down the old wall and rebuilt a party wall; but as they were erecting improved premises at No. 37 they rebuilt a higher party wall and a thicker party wall than the old one. This was without any warrant of the surveyors. An account was sent to Mr. Richardson, claiming half cost, £226. Mr. Richardson returned it with a denial of liability. It was sent to the defendant, with the same result; hence the action. Mr. Hudson, for the plaintiffs, claimed the expenses under sect. 96 of the London Building Act of 1894, urging the wall was dangerous, and the defendant had not within a month expressed his dissatisfaction in writing, under sect. 97. In the alternative he claimed a contribution under the common law, in that, under a compulsion order, the plaintiffs had incurred expense in carrying out a work the defendant was equally liable to execute. He also contended the expenses of rebuilding were consequent on the pulling down; the houses could not be left unseparated. He claimed not the whole of the expenses of the new wall, but such part as in height and thickness represented the old wall. His Lordship went on to say that if the plaintiffs' claim had been for the expense of rebuilding without any question of the dangerous conditions, the objections to it would be numerous and, he thought, insuperable. In the first place the plaintiffs, when they gave their party wall notice to the occupier of No. 36, were not in occupation of No. 37, and had no legal or equitable interest in the premises. The notice must be given by a building owner. He must either be in receipt of the rent and profits or in the occupation of adjoining land, otherwise than as tenant from year to year or tenant at will. If he was in occupation, the fact that he was under agreement and not under demise would not injure his position, provided the agreement did not contain a clause making him tenant at will. The plaintiffs, on March 26, were not in occupation. They expected to be and were in occupation on May 20; but no owner was bound to act on a notice, on the assumption that the person giving it would become the owner before the notice had expired. The notice was hypothetical—if the survey showed it to be desirable. There was nothing about a higher wall or a thicker wall, and what was to happen was to be contingent on what was found when the wall was opened up. He could not think that such a notice complied with the requirements of the Act. He thought the notice bad on that account also. It was provided by sect. 96 of the Act of 1894 that the building owner should deliver to the adjoining owner within a month of completion an account of the expenses. The work was finished on February 24, but no account was delivered till March 28. It was said the delivery to Mr. Richardson was sufficient against the present defendant. His Lordship did not agree. It was then argued that the clause was merely directive and not a condition precedent; but his Lordship thought time was the essence of the proceedings. As, however, the plaintiffs need not serve a party wall notice in a requirement to pull down a dangerous structure by the order of the Court, it was immaterial who was the owner when he gave the unnecessary notice, or whether the unnecessary notice was bad in substance. It was to be noticed that the magistrate's order was only to take down the wall. The plaintiffs, in rebuilding it higher and thicker, must either be acting under a particular clause or without legal authority at all. In the latter case they could not recover any share from the adjoining owners. In the former case they could not, if they had failed to comply with the conditions of notice; and they had so failed. He held that the plaintiffs' claim for a proportion of the expenses of rebuilding failed. The claim in respect of pulling down was in a different position. This appeared to come under the class of cases where an implied request to pay on behalf of the other had been incurred. Sect. 173 clearly contemplated contribution between owners. He held the plaintiffs could recover the due proportion of expenses properly incurred in pulling down the wall, but not of rebuilding the wall actually built, and he made a declaration to that effect. Counsel had agreed that the due proportion of the proper amount of expenses should be settled in some way to be agreed between them. As each party had partly succeeded and partly

failed, he ordered that each party bear his own costs.

Mr. Hudson, K.C., appeared for the plaintiffs (instructed by Mr. Charles T. Price, 9, Bush-lane, Cannon-street), and Mr. English Harrison, K.C., for the defendant (instructed by Messrs. Letts Brothers, 8, Bartlett's-buildings, Holborn).

Damages against Builders.

IN the King's Bench Divisional Court on the 22nd ult., Mr. Justice Horridge and a jury concluded the hearing of an action for personal injuries, brought by Joseph Deacon, a night watchman, of 18, Brookdale-road, Walthamstow, against Messrs. L. & W. Whitehead, Ltd., builders and contractors, of Portland-place North, Clapham-road, South Lambeth.

Mr. T. Hollis Walker, K.C., and Mr Samuel Moses appeared for the plaintiff, and Mr. T. P. C. Gibbons, K.C., and Mr. Harold Brandon for the defendants.

Plaintiff's case was that defendants, while engaged in certain work at the Oxford-circus Tube Station, had in the course of their operations to dig a trench, and in order to enable the employees of the various contractors concerned to cross over it they provided a plank. On the evening of April 6 last year, it was alleged, the plank was so carelessly placed on hard bits of concrete that when plaintiff stepped upon it for the purpose of crossing—in order to get to that part of the station where he was employed by the Otis Escalator Company—the plank tipped and he fell into the trench, fracturing his left foot and breaking his leg above the ankle bone. On being found in the trench he was taken to the Middlesex Hospital, and his left foot had to be amputated.

For the defendants several witnesses stated that the plank was safe to walk upon, and that it formed a means of reaching the moving staircase. Not only that, but placed just below was a plank on each side of the main plank, to add to the safety of crossing and prevent anyone tumbling into the trench. One end of the main plank was on the ground and the opposite end on a step, and it had been stable all the time and given complete satisfaction.

Mr. Justice Horridge, in addressing the jury, said they had two distinct stories from the respective sets of witnesses, and they had not contradicted their statements. It was about the most difficult case he had had to deal with. The men left at five o'clock, and the accident happened at ten minutes to six. It seemed pretty clear that, if put down, the planks at the side of the main plank must have been moved, as otherwise plaintiff could not have tumbled into the trench. Did they believe defendants' statement that the planks were left as usual and that two of them must have been subsequently moved, or that the men did not finish their work and put the planks down? If the jury found for the plaintiff, they had not only to consider his loss of wages, but whether he would be able to again get work as a watchman. As they were aware, a man who had an artificial foot was not as handy in getting about to watch a place and to catch anybody who had come to steal as a man who had both feet, and it might be that if not for the exigencies of the war an employer would not think of engaging such a man for the work. Therefore the jury might think plaintiff might be incapacitated for a long time.

The jury, after deliberation in private, assessed damages at £400.

Judgment was entered accordingly.

District Surveyors and the London County Schools :

Daubney *v.* Akers & Co., Ltd., Builders.

THIS was a case heard before Mr. A. E. Gill, magistrate at the Tower Bridge Police Court, in respect of a claim from the builders for fees amounting to £7 6s. 3d. by the District Surveyor, Mr. Charles Archibald Daubney, on work done to a public elementary school belonging to the L.C.C. at Southwark Park, Bermondsey.

Mr. F. F. Daldy on behalf of the plaintiff; the Solicitor to the L.C.C. on behalf of the defendants.

Mr. Gill gave judgment as follows :—

This is a complaint by the District Surveyor under sects. 154 and 157 of the London Building Act, 1894, claiming fees in respect of work done by the defendants as contractors to the London County Council at their school in Southwark Park-road, which is situated in the complainant's district. It is admitted that if anything is due, the amount claimed is correct.

It has been proved or admitted that the work in question was done upon buildings "according to plans which are, under regulations relating to the payment of grants required to be, and have been, approved by the Board of Education" within the meaning of sect. 3 of the Education (Administrative Provisions) Act, 1911—under which Act "any provisions in any local Act dealing with the construction of *new buildings*" do not apply "in the case of any *new buildings* being school premises to be erected or erected according to" such plans. The work in question consisted of (1) extensive alterations to the Infants' Department; (2) the addition of a new wing.

In July last an information laid by the present complainant against the defendants for failure to serve a building notice under sects. 145 and 200, sub-sect. 11B, in respect of the same work, was heard by me at this Court. I then held that the wing was not a new building, but an addition to an existing one. It has been contended that that finding is in the nature of a judgment *in rem*, or a judgment *inter partes*, creating an estoppel, and so conclusive of the fact in this case.

Assuming that the parties are the same—and it is to be observed that the former proceeding was for a penalty and in the nature of a criminal matter, while this is purely civil—the finding that the extension of the Infants' Department was an "addition" and not a new building was incidental only to the decision in that case. Moreover, that finding was not essential to the conviction, because, on the view that I took, a building notice should have been served in respect of the alteration. I have therefore held that it is open to the defendants to raise this question again in these proceedings and admitted the evidence. I, however, see no reason to alter the opinion that I then formed, and accordingly hold for the purposes of this complaint, and for the reasons which I then gave and need not repeat, that the extension of the Infants' Department is not a "new building," but an "addition" to an old one.

Under the London Building Act, 1894 (see Third Schedule), the District Surveyor is entitled to fees in respect to "additions" to and "alterations" of existing buildings as distinct from "new buildings," and the second point which I have to consider is whether that right is affected by the Education (Administrative) Provisions) Act, 1911, sect. 3.

In terms the latter Act only exempts "new buildings." It has been suggested that an "addition" within the meaning of the London Building Act, 1894, might be "a new building" within the meaning of the Act of 1911. But I think no argument has been addressed to me in support of the contention, if the contention is made, that the right of the District Surveyor to fees in respect of alterations is affected by the Act of 1911.

It appears to me that the right of the District Surveyor to fees in respect of additions and alterations remains unaffected by the later Act.

I am confirmed in this view by observing that in the case of Holliday & Greenwood, Ltd. *v.* District Surveyors' Association (Incorporated) & Dicksee (78 J.P. 262), it was not contended that the Act of 1911 exempted the builders from serving building notices in respect of alterations and additions to school premises, although the plans had been duly approved by the Board of Education. The appellants pleaded guilty to the information for failing to serve a building notice in respect to the alterations to existing buildings at the Victory-place School. And the Divisional Court referred back to the magistrate the information for failing to serve a notice in respect to the new wing of the Paragon School, for him to determine whether this work was a new building or an altered building. The Court appears to have been of opinion that, as far as alterations or additions are concerned, a building notice should be served, notwithstanding the Act of 1911.

The principal point raised for the defence is based upon the particular facts of this case. It is contended that the District Surveyor had not and could not have any duties to perform, and that therefore he is entitled to no fees. A distinction is sought to be drawn between the facts of this case and those in Galbraith *v.* Dicksee (74 J.P. 348), and reliance is placed on the decision in Westminster Corporation *v.* Watson (1902, 2 K.B. 717). That was a case relating to wooden structures, the licensing of which had been transferred by statute from the London County Council to the Borough Council. I doubt if the dicta relied upon mean more than that a District Surveyor is not entitled to his fees who, purporting to exercise functions under the London Building Act for the purpose of claiming a fee, proceeds to inspect a structure to which the Building Act has no application, or which he knows to be of so insignificant a character that there is nothing for him to inspect. Can it be said in the present case that the complainant had no duty to inspect when he learnt that these building operations had begun at the Southwark Park School? Until his inspection he had no knowledge of the nature and extent of the work.

Although the building is exempt under sect. 201 (5) from Parts VI. and VII. of the Act, there are questions upon which he has to satisfy himself, arising under other parts of the Act, questions of height, of frontage, etc.

By sect. 160 he is required to make a monthly return of every building which has been *enlarged* or *altered*, and by sect. 161 his signed return is to be deemed a certificate that "all the works enumerated therein as completed have been done in all respects in accordance with the Act to the best of his knowledge. . . ."

It is urged that by sect. 201 (5) the District Surveyor is relieved of all duties in respect of materials and method of construction, and that as the buildings are a considerable distance from the street, and the elevation of the old building has not been raised, and the addition has no story above the ground floor, no question as to the building line or height, in fact, arose. It appears to me, nevertheless, that these are facts which it is the duty of the District Surveyor to ascertain.

It may be that a cursory examination of the plans or of the works in hand was sufficient in this case to reveal that there was no breach of the Building Act in those respects. It does not, however, follow that the duty of the District Surveyor would have been more onerous if the addition had been more than one story high and in proximity to the street. It might still have been obvious on mere inspection that it was within the building line and below the limited height.

It has been urged that no question can arise with regard to building line, because the London County Council can consent to the erection of a building beyond the building line—sect. 22 (1). A similar argument in respect to height was advanced in the case of the London County Council *v.* District Surveyors' Association and Willis (73 J.P. 293), and did not commend itself to the Court.

It may be true that in this case the complainant's duties have been light. He has merely visited the premises from time to time, ascertained what was the work in hand, and satisfied himself that no breach of the Building Act was contemplated or committed. If it is contended that the fees in the Schedule are excessive for these services, the answer appears to be that they are the method of remuneration prescribed by the Act for carrying out the general duties of a District Surveyor.

And if the fees are excessive, the London County Council, by sect. 154 (1), has the remedy in its own hands. As the Lord Chief Justice observed in Galbraith *v.* Dicksee :—"If there was any ground for saying that these fees were too high, having regard to the work that had to be done, under such circumstances other fees might have been laid down by the Council" (74 J.P., p. 351).

It appears to me that this case is covered by the authority of London County Council *v.* District Surveyors' Association and Willis (73 J.P., p. 291), and Galbraith *v.* Dicksee, *supra*. See in particular the following passages in the judgment of the Lord Chief Justice in the latter case :—

"Mr. Lush only made his argument possible by using the words 'supervising the work' in a case which is not properly applicable to the case at issue. It is not supervising the work; it is doing the work or duty of a District Surveyor. I do not wish to repeat myself, but it cannot be seriously disputed that, under Part V. of the Act, the surveyor has many things to watch—he has to watch the height; he has to watch the building line; he has to watch the by-laws. It may be in a case of this kind none of those things are likely to be infringed; but at the same time we have the Act to deal with. . . .

"*Mr. Lush has said that in this particular case he would have to do nothing. That may be perfectly true*, but it does not follow because he has nothing to do in a particular case he will have nothing to do in any case. . . .

"I cannot help pointing out that the Third Schedule, which is a schedule as to fees, contemplates fees which are for general services, and *fees which are in many cases for no services at all*, and fees which are for special services. Mr. Lush's argument proceeds on this basis, that unless you can show that the surveyor has done some work of which the County Council get the benefit he is to have no fee at all. That would strike at the root of this sort of general fees paid to the *surveyor as such*, because a building is being erected in his district, over which building he has got some—I must use the word 'supervision,' because I cannot use a better word—some supervision under the Act other than Parts VI. and VII."

Judgment was given for the amount claimed, with twenty-five guineas costs.

The previous case referred to was reported fully in the *Builder* for August 21, 1914.

THE BUILDING TRADE.

WAR PRICES AND WAR WAGES.

IT is rumoured that the Building Trade Employers are shortly to be asked by the operatives to take into consideration the advanced cost of living due to the war and to advance wages to an equivalent extent.

The action of the railways in conceding an advance on this ground of about 3s. per week has started the movement. The example is being followed in the mining, engineering, and shipbuilding trades.

The matter is a serious one for the employers in those trades which are busily engaged, but in the building trade such a demand presents greater difficulties because the trade has been depressed for a long period and is likely to remain so during the war. Unemployment is increasing in the masons', plasterers', painters', etc., trades. The inference is that work is scarcer and contracts harder to obtain, which means narrow margins of profit or even no profit at all for employers. Add to this the marked rise in the cost of certain materials since the war, and it must be obvious that many employers are losing money on existing contracts, and in no case receive with favour a demand for an advance of wages.

The position in those trades which have enjoyed a considerable degree of prosperity both before and since the war is quite different from that of the building trades, because, if profits are being made, to concede some of it to the men cannot greatly hurt the employers.

There are, roughly, three classes of building trade employers involved, viz., those who have contracts in progress which were taken before war broke out, those taken soon after the war began, and those who are in the market to obtain further contracts. As regards the first named, they have been very hard hit by finding themselves obliged to carry out their contracts when prices of timber, certain metals, and glass have greatly advanced. Then there is extra cost of transport due to delays. This is very serious, amounting in certain cases to many times the estimated cost. Indeed cartage contractors will only work by the day owing to the delays in getting goods at railway stations. An endeavour was made to get the Government to rule that the circumstances were sufficiently extraordinary to justify contractors demanding from building owners the extra cost due to war and damage by the King's enemies, but this plea was not entertained, so they have had to endure it, and consequently are losing money on those contracts. To ask those employers to concede an advance of wages on the top of all this is a very serious thing to do, and, unless some relief can be found in their case by the building owner being brought into the matter and helping to shoulder the burden, it is a fact that some of them would prefer a strike so that the work could not be proceeded with.

The second class are perhaps somewhat better off, inasmuch as they will have been able, when tendering, to provide for the extra cost of materials, and it may be that in some cases they were successful in safeguarding themselves against possible increases of one kind or another; but the extent to which that may have been possible depends mainly upon the intensity of the competition they were facing, and, in view of the general apprehension that the building trade is in for a very bad time, it is more probable that prices have had to be kept as finely cut as possible to secure any work in competition.

As regards the third class, no doubt contractors in taking further work can provide for any advance of wages which may be conceded, but the cost of building is already so high that it is a factor in checking trade, though not the only one, and it may well be that any advances of wages conceded will prove illusory and only tend to precipitate unemployment in this trade. Unless some amicable understanding can be reached between the interests concerned, viz., the building owners, the contractors, and the workmen, there will be varying local or individual action all over the country, and great difficulty will be found in holding the workmen to their working-rule agreements, some of which have some years to run, and all of which require notice to be given for their alterations. The result may be that building owners will find their works held up by labour troubles of one kind or another.

It is highly undesirable that this question should be left to work itself out, and every effort should be made by all parties concerned to bring about a friendly settlement. It must not be forgotten in this connection that the workmen in the building trade have received advances during the last two years of 1½d. to 2d. per hour, which were asked for and granted solely on the ground of the increased cost of living. The only fresh question therefore now should be the increased cost of living since the war began.

If the indications given to the House of Commons during a recent debate are fulfilled, the worst of this increased cost has been experienced, and a marked amelioration may be expected during the next few months.

The action of forcing the Dardanelles undertaken by the Allies, when completed successfully, should set free supplies of food-stuffs from Russia which will go far to bring about the required result.

NOTTINGHAM AND DISTRICT ASSOCIATION OF BUILDING TRADES EMPLOYERS.

THE annual meeting of this Association was held at the Mechanics' Institution, Nottingham, on February 15, the chair being occupied by Mr. F. Quarton, the retiring President.

The President gave an interesting report of the activities of the Association during the past year. He said that only a small amount of work was being carried out locally. During the year notices for advances in wages and alterations in the working rules had been received from the workmen engaged in several branches of the trade, and in every case satisfactory arrangements had been come to. A meeting was held in connection with the London dispute, when an address was given by Sir H. Bartlett, Bart., a member of the London Master Builders' Association, and after hearing him they were convinced that a better relationship existed between masters and men in Nottingham than in London. He thought this was due to the Conciliation Scheme. The outbreak of hostilities was responsible for a rapid advance in the price of materials, which had resulted in a cessation of building operations, work being put aside in anticipation of a drop in prices; but in his opinion they would not be lowered for a considerable time. There was likely to be a shortage of labour in the future in consequence of the war—already a large number of building trade operatives had joined the Army. With regard to the masonry and bricklaying classes at University College, on account of the war there had been a decrease in the number of students as compared with the previous year.

Election of President and Officers.

The senior Vice-President, Mr. F. T. Doleman, was unanimously elected President for the coming year, and a vote of thanks was passed to the retiring President for his services during the past year. Messrs. Hopewell and Vickers were elected Vice-Presidents, and Mr. J. W. Woodsend was re-elected Treasurer, and elections were also made for the Council and Committees. A vote of thanks was accorded to Messrs. Crane & Ward for their services on the City Council, and to the Secretary, Mr. W. J. Barton.

NATIONAL SCHEME OF CONCILIATION:

SOUTH-EASTERN CENTRE BOARD.

THE annual meeting of this Board was held at Koh-i-Noor House, Kingsway, London, W.C., on February 15.

The following officers were elected for the coming year:—Chairman, Mr. J. Croad (Gosport); Vice-Chairman, Mr. C. Pearcy (Southampton); Employers' Secretary, Mr. A. G. White (London); Operatives' Secretary, Mr. A. E. Hatcher (Portsmouth).

The Apprenticeship Question.

A letter was read from the Southampton Local Board of Conciliation reporting that a discussion had taken place on the question of apprenticeship, and a general feeling appeared to exist that the old system of apprenticeship should be revised, but coupled with better pay and more satisfactory conditions of disciplinary control, and a request was preferred for the Centre Board to consider the question to see whether some scheme can be formulated to make apprenticeship more attractive to boys and more satisfactory to employers. From the discussion which ensued it appeared that the system of apprenticeship had decayed more in the South than in the North. That it had been recognised in some districts that better pay was necessary to attract boys to the trade. That the system in the engineering trade was not to bind by indenture, but to take boys under a form of agreement, by which, if they left a shop, they could have a certificate of the time served to take with them to their next employer. There was no obligation in such agreement to teach the boys a trade. It was complained that excessive specialisation was the main defect of the present system, so that boys did not acquire any all-round knowledge of their trade. Eventually it was resolved:—

"That, in the opinion of this Board, the apprenticeship question ought to engage the attention of both employers and operatives as to—

(a) Increased wages,
(b) A better system of instruction,
(c) Either shorter indentures or other type of agreement,
(d) Best means of attracting boys to the trade,

and resolves to consider the question further at its next meeting."

CAPTURING ENEMY PATENTS.

THE following list of British patents, which have been granted in favour of residents of Germany, Austria, or Hungary, is furnished in view of the new Patents Acts, which empower the Board of Trade to confer upon British subjects the right to manufacture under enemy patents, and is specially compiled for the *Builder* by Mr. Lewis William Goold, chartered patent agent, 5, Corporation-street, Birmingham. It is desirable in the first instance to obtain the latest particulars upon the Patents Register. If any patent listed has been assigned to a non-enemy proprietor, the law does not apply:—

5,405 of 1912.—Brackets, etc. In a device for securing curtain-pole brackets and other articles to walls, a plate having a screw is nailed by oblique nails to the wall, the nails being then secured by screwing down a plate upon them: R. Kramer and C. Kramer, Prussia.

5,648 of 1912.—Water-closets. The soil pipe of the type in which liquids are separated from the solid excreta is formed with a tangential flushing-horn. The spiral motion of the water facilitates the escape of the liquid by annular holes and outlet: M. F. Hoffmann, Germany. Dated March 8, 1911.

5,958 of 1912.—Glazing windows, etc. The glazing putty in windows, etc., is protected by metal strips of angle-section, the parts of which are corrugated, perforated, or roughened, and pressed into the putty, until the other parts fit against it. The inner surfaces of the outer parts may be roughened: J. H. Wilden, Germany. Dated March 22, 1911.

6,034 of 1912.—Floorings. A jointless floor is formed by laying thin, dry plates or blocks of artificial wood on a concrete foundation, or upon a layer of sand thereon, and covering the plates or blocks with a thin continuous layer of artificial wood. Cracks are thus prevented from spreading from the foundation to the linoleum or like floor covering: Kaliwerke Aschersleben Abteilung Tekton, Germany. Dated March 10, 1911.

6,083 of 1912.—Shelves. Adjustable shelves, of the kind supported from flanged uprights by means of brackets, have the front faces of the uprights provided with slots through which passes a forwardly directed bend at the bottom of a lateral flange on each bracket: Wolf, Netter, & Jacobi, Germany. Dated March 9, 1911.

6,156A of 1912.—Slat and lath fabrics. Fabrics adapted to carry plaster for walls, ceilings, etc., composed of canes connected by wires, are provided with wooden laths secured by the binding wires, by means of which the fabric may be

fixed to the joists. The canes are so secured that they can be moved longitudinally to break joint and engage with the members of the adjoining piece of fabric: W. Frank (*née* Kruger), Germany. Dated October 11, 1911.

6,270 of 1912.—Window-operating apparatus. Fastening and operating horizontally hinged windows, etc.: F. Bohrer, Germany.

6,359 of 1912.—Locks. The revolving barrel of a lock for receiving a flat key is stamped from a strip of sheet-metal in such a manner as to form side lugs pressed together to form a slot for the key: C. F. Schroeder (firm of), Germany. Dated February 1, 1912.

6,597 of 1912.—Artificial stone. Relates to the manufacture of artificial stone for tiles, etc. Ground burnt clay, such as brickdust, is mixed with 6 to 8 per cent. of pulverised vegetable fibre rich in silica such as equisetum ("horse-tail"). One-quarter to one-fifth part of hydraulic binding material, such as cement, is added, and the mixture is moistened with dilute hydrofluoric acid of such a strength that the silicates are not decomposed. The product is moulded and dried, and then hardened by treating again with dilute hydrofluoric acid: M. Binetter and D. Komlos, Hungary. Dated July 25, 1911.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

AMERSHAM.—Plans passed by R.D.C.:—House, Bottrells-lane, Chalfont St. Giles, for Messrs. Davis & Boddy; house, the Avenue, Chesham Bois, for Mr. H. Kennard; house, Nargate-lane, Missenden, for Mr. A. Scott; house, Vale-road, Chesham, for Mr. H. Jay; house, Switchells-road, Great Missenden, for Messrs. H. J. & A. Wright.

Banstead.—The Surrey Joint Poor Law Committee have received the approval of the L.G.B. to their scheme for the treatment of epileptic and feeble-minded persons. They have acquired for £16,900 an estate at Woodmansterne, Banstead. The estate includes a mansion large enough to accommodate 100 patients. The proposal is to have in addition a number of detached buildings, each accommodating forty to fifty persons. Eventually accommodation will be found for between 600 and 700 patients.

Barking.—Revised plans submitted by the County Architect for the proposed secondary school for 210 boys and girls at Barking, the estimated cost of which is £11,000, have been approved by the Essex E.C.

Barnet.—Plans passed by East Barnet Valley U.D.C.:—Wine store at the rear of Bradley, Park-road, for Mr. Theodore Damenez; motor-house in Plantagenet-road for Messrs. W. E. Palmer & Sons.

Beaconsfield.—Plans passed:—Garage, "Highfield," Grove-road, for Mr. W. A. Vare; garage, "Headley," Curzon-avenue, for Mr. D. L. Crump; sheds, Aylesbury End, for Lord Burnham.

Bedwas.—A L.G.B. inquiry has been held into the application of the U.D.C. to borrow £2,150 for works of water supply at Machen.

Bexhill.—Plans passed:—Garage at "Genista," Belle-hill, submitted by Mr. G. H. Gray, on behalf of Mrs. Hibbert; alterations and additions to No. 44, Devonshire-road, submitted by Mr. J. B. Wall, on behalf of Mr. C. O. Benbow.

Blackburn.—The scheme of Mr. P. P. Wheelwright, the Corporation Electrical Engineer, for erecting new works on a site at Whitebirk, at an estimated cost of £100,000, has been referred to a Sub-committee for consideration and report.

Bognor.—An inquiry has been held by the L.G.B. into the application of the U.D.C. to borrow £1,928 for land and the erection of four cottages.

Canterbury.—The E.C., having considered three sites for a new school for the Wincheap district, recommend the purchase of 1¼ acres of orchard land at the rear of the Martyrs' Memorial for £600.

Carlisle.—The Health Committee has adopted a scheme for the erection of twelve houses in Boustead's Crossing and twenty-four houses in Willow Holme, each house to contain living-room, scullery, food-store, two bedrooms, and to have a garden attached. The rental proposed to be charged is 5s. 3d. a week, and the cost of the scheme, including necessary street improvements, is estimated at £9,582.

Chatham.—The E.C. have instructed the Surveyor to prepare plans for alterations to the New-road Council school.

Cheadle Hulme.—The London and North-Western Railway Company has decided to carry out extensions on their main line at Adswood, near Cheadle Hulme. There is to be a widening of the railway on the west side, which will necessitate important alterations to the bridge which carries the lines over the Midland route from Cheadle Heath to Chinley.

Chesterfield.—Approval has been given by the Board of Education to the plans for the erection of a school in Soresley-street.

Chorley.—A plan of the proposed rebuilding of bank premises in Market-street for the Williams Deacons Bank, Ltd., has been approved.

Cirencester.—Alterations at 14, Castle-street, for Mr. C. Bennett.

Coventry.—The T.C. have decided to provide stained glass in the windows of the Council Chamber at an estimated cost of £400, and to widen Clarence-street at a cost of £1,460.

Crayford.—The President of the L.G.B. has informed Mr. Rowlands, M.P., that the Public Works Loan Commissioners have granted a loan of £48,000 to the Crayford Cottage Society, Ltd., towards the erection of 300 cottages at Crayford. The cost of the buildings, including cost of site, roads, etc., is estimated at £71,350, and the weekly rentals of the cottages at 7s. 6d. each. The rates and cost of repairs are to be paid by the Society.

Croydon.—Application is to be made by the T.C. to the L.G.B. for a loan of £4,000 for widening Cherry Orchard-road, High-street, and South End. Plans passed by T.C.:—Messrs. Hayward & Son, bungalow, Cedar-road; Mr. G. H. Dale, three houses, Richmond-road; Messrs. Young & Macintosh, converting skating rink into factory, Cherry Orchard-road.

Dalmuir.—Plans are before the Dean of Guild Court of a workmen's hotel for the employees of Messrs. Wm. Beardmore & Co. The hotel is to be equipped with cooking apparatus, laundry, recreation-room, and hairdresser's-room, and will provide 380 beds.

Darfield.—The U.D.C. having asked for permission to borrow £15,428 for the provision of workmen's dwellings, a L.G.B. inquiry has been held.

Dartford.—The R.D.C. have passed plans of 200 cottages to be built on the Collyer's-lane Estate by the Crayford Cottage Society, and of a reinforced-concrete building by Messrs. Vickers', Ltd., Crayford.

Dover.—The T.C. has consented to the erection of the new county school for boys fronting Frith-road and Castle-avenue, Dover, for the Kent E.C.

Dunmow.—Plans for the enlargement of Great Dunmow School have been approved by the Essex E.C., and forwarded to the Board of Education.

Durham.—Plans approved by the R.D.C.:—Mr. G. Inness, dwelling-house at Auton Stile; Mr. James Crawford, new streets and building sites at Springwell and two dwelling-houses at Springwell.

Easington.—Plans passed by R.D.C.:—203 houses at Blackhali Colliery for the Horden Collieries, Ltd; twenty-six houses at Murton for Mr. J. M. B. Doxford; and two pairs of flats at New Seaham for Mr. R. Davison.

East Farleigh.—Plans by the Kent E.C. have been approved by the Board of Education for new Council school to accommodate 160 older scholars and ninety infants.

Edmonton.—It is proposed to enlarge the Latymer School at an estimated cost of £7,000.

Foleshill.—Plans passed:—House and shop and three houses in Little Heath-road for Mr. E. Pearson; conversion of weaver's shop into house at Croft's-road, Bedworth, for Mr. J. Broadbent; wooden store-shed, Ash Green, Exhall, for Messrs. J. Dewis & Sons. The R.D.C. have decided to proceed with their housing scheme.

Glasgow.—Linings granted by Dean of Guild Court:—Cassel Cyanide Company, Ltd., 19, St. Vincent-place, alterations to their works at 36 to 114, Shuna-street, Maryhill; Mrs. Margaret J. Stevenson, 3, Roselea-gardens, Temple, dwelling-house in Lochburn-road; and to the Glasgow School Board to erect a school at the corner of Boden-street and Bernard-street, Bridgeton.

Hornsey.—Plans passed by T.C.:—Conversion of two dwelling-houses into four tenement dwellings at Church-crescent, Muswell Hill, by Mr. W. J. Collins, of Firs-parade; two dwelling-houses, 3 and 4, The Drive, Fordington-road, Highgate, by Mr. C. Tucker, of Southern-road, Fortis Green; combined drainage of six dwelling-houses in Montenotte-road, Crouch End, by the Imperial Property Investment Company; dwelling-house in Montenotte-road, Crouch End, by Mattock Brothers, of Wood Green; two dwelling-houses in Montenotte-road, Crouch End, by the Imperial Property Investment Company; and conversion of old brewery in Fortis Green into a rifle range by the Muswell Hill and District Training Corps.

Keighley.—Plans passed:—Mr. Prince Smith, office, Brewery-street; Mr. Joshua Waddington, two houses, High Spring-road South; Messrs. Walter Slingsby & Co., Ltd., additions to works, Woodhouse-road.

Kilkee.—The Kilrush R.D.C. have appointed Mr. J. J. O'Malley, architect, Limerick, to formulate and carry out a scheme for the erection of twenty-four labourers' cottages for Kilkee.

Letchworth.—One of the leading Antwerp engineering firms, Messrs. Kryn & Lahy, have taken 6 acres of land at Letchworth, and commenced to build new works, where many of their men who are now refugees in this country will be employed.

Leyland.—An inquiry into the application of the U.D.C. to borrow £1,283 for waterworks has been held by the L.G.B.

Linthwaite.—With regard to the Hoylehouse improvement, the plans prepared by Mr. Joe Ainley of a suggested way of utilising the remainder of the land for shops and a dwelling-house have been approved by the U.D.C.

Mexborough.—Plans passed for four houses in Carlisle-road for Mr. Creighton.

Oundle.—Plans passed for two new houses in the Gordon-road for Mr. S. Tebbutt.

Plaxtol.—A new school to accommodate 230 children is to be erected by the Kent E.C.

Poole.—Mr. Van Schepdael, architect, has been instructed by the B.G. to prepare plans for a children's home on lines suggested by the Assistant Architect of the L.G.B.

Prudhoe.—A L.G.B. inquiry has been held in reference to the application of the U.D.C. for sanction to borrow £6,000 for the purchase of land and the erection of working-class dwellings. The site in view is 8 acres at Edgewell, where the Council propose to build thirty houses.

Queenborough.—The Kent E.C. is purchasing an acre of ground from the War Office as a site for a school.

Reigate.—The L.G.B. have authorised the B.G. to erect a new infirmary, and to instal systems of lighting, heating, and hot-water supply in connection therewith, at a cost not exceeding the sum of £10,500. The L.G.B. have held an inquiry into the application of the R.D.C. for sanction to borrow the sum of £2,850 for the extension of their isolation hospital in the parish of Horley. Mr. T. W. Parish, architect, explained the plans. The T.C. are making application to the L.G.B. for its consent to the raising of loans as follows:—For the new police-station at Redhill, £3,500; for the new fire-station at Redhill, £2,500.

Rochdale.—The Cleansing Committee have sanctioned a scheme for adapting the old steam tramway depôt in Entwisle-road for cleansing purposes at a cost of about £700. The L.G.B. have sanctioned a Corporation loan for £5,570 for works of sewerage in various parts of the borough.

Rochford.—A L.G.B. inquiry has been held into the application of the Rochford R.D.C. for a Provisional Order to empower them to put into force the powers of the Lands Clauses Acts with respect to the compulsory purchase of certain land in the parishes of South Benfleet and Canvey Island, required for the purpose of sewerage and sewage disposal for South Benfleet.

St. Germans.—A L.G.B. inquiry has been held into the application of the R.D.C. to borrow £900 for sewerage works at Crafthole.

Shoeburyness.—The Joint Hospital Board have decided to erect an enteric fever block at the Sutton Ford Hospital at a cost of £2,000.

Stourbridge.—Sites in Vicarage-road and Hemplands-road have been approved by the T.C., on which twenty workmen's houses will be erected.

Tamworth.—The L.G.B. have held an inquiry into the application of the T.C. for sanction to borrow £15,000 for housing purposes. The proposal is to erect sixty-seven houses, of three types, on a site owned by the Corporation, known as The Bradfords, adjoining the Lichfield-road. The estimated cost is £14,561 3s. 4d.

Upminster.—The proposed new school for girls and infants is to be proceeded with by the Essex E.C., but not before the beginning of next year.

Walthamstow.—An inquiry has been held by the L.G.B. into the application of the U.D.C. to acquire land for housing purposes at a cost of £2,300.

Wilmslow.—The U.D.C. has resolved to proceed with the erection of new offices. Specifications have been sent out to a number of architects, and several designs have already been submitted, and will come before the Council in due course.

Withernsea.—The L.G.B. have sanctioned the borrowing by the Withernsea Council of £7,500 for the South Cliff sea wall scheme.

Wrexham.—The T.C. have adopted a scheme for the erection of thirty houses at a cost of £6,056, and the erection of a slaughter-house at a cost of £4,500

York.—Plans passed:—Mr. R. Ellerby's Executors, redrainage and water-closets, 38, 40, and 44, Haxby-road; Mr. C. Potter, redrainage, 14, Charlton-street; Messrs. Pallister & Smith, redrainage, 76-79, Layerthorpe, 2, Redeness-street, and 3 and 4, Redeness-street; Dr. Barton, house, Holgate-road; Mr. J. Faulkner, redrainage, 1 and 3, Leicester-street; Messrs. J. Tetley & Sons, redrainage and water-closets, Locomotive Inn, Watson-street; Mr. C. D. Mills' Executors, redrainage of water-closets, 11 and 11½, Elmwood-street; Mr. T. W. Taylor, house and shop, East-parade; Mr. W. Martin, redrainage and water-closets, 18 and 19, Price's-lane; Mr. J. Wilkinson, redrainage and water-closets, 22, 23, 24, and 25, Lansdowne-terrace; Mrs. Clarke, redrainage and water-closets, 26 and 27, Lansdowne-terrace; Yorkshire Insurance Company, two houses, Hobgate, Acomb-road.

* See also our list of Competitions, Contracts, etc., on page 234.

GENERAL BUILDING NEWS.

BANK, PALL MALL, S.W.

Additions have been made to the premises in Pall Mall and Waterloo-place of Messrs. Henry S. King & Co., bankers and agents. The architects were Messrs. Thompson & Walford, Leadenhall-buildings, E.C., who designed the original portion of the building erected a few years ago. Messrs. Trollope & Colls, Ltd., Coleman-street, E.C., were the general contractors. The furnishing of the additional premises just completed was in the hands of Messrs. Shannon, Ltd., Ropemaker-street, E.C.

HOUSE OF RESURRECTION, MIRFIELD.

The addition of a new wing for retreats to the House of Resurrection, Mirfield, has recently been completed. The extension is built at the north-west end of the college, and forms a quadrangle with the larger buildings. Some 85 ft. in length and 25 ft. in breadth, the new retreat house contains twenty-nine bedrooms, two temporary common-rooms, oratory, and entrance hall, and at some future date it is proposed to increase the accommodation of the

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

——	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	9	—	9½	9½	—	9	8	6½	6½	6½
Accrington	10	9½	9½	9½	9	9	9½	6½	6½	6½
Altrincham	9½	10	10½	10	8½	10	9	6½	6½	6½
Ashton-under-Lyne	10½	10½	10	10½	9	10	9	6	6	7
Barnsley	9½	9½		9½	9	9	8½	7	7	7
Barrow-in-Furness..	9½	10	9½	9½	9½	9½	9½	7	7	7
Barry	9½	9½	9½	10	—	9	8½	6½	6½	6½
Bath	8½	8½	8½	8	7½	8	7½	5½	5½	5½
Bedford	8	8	8	8½	8	9	6½	5	5	5½
Birkenhead	11	11	11	11½	11	11	9½	7	7	7
Birmingham	10½	10½	10½	10½	9½	10½	9½	7½	7½	7½
Bishop Auckland..	9	9	9	9	10	9	7½	6	6	6½
Blackburn	10	10½	10	9½	9½	10	9½	6½	7	7
Blackpool	10½	9½	9½	9½	8½	9	8½	6	6	6
Bolton	10	10½	10	10½	10	10	9½	6–7	6–7	6–7
Bournemouth	8½	8½	8½	8½	8½	8½	8	6	6	6
Bradford	10	10	9	9½	9½	10	8½	7	7	7
Bridgwater	6½	6½	6½	6½	6½	6½	6	4	4	4
Brighton	9	8½	8½	8½	—	8	7	6	6	6
Bristol	10½	10½	10½	10½	—	10½	9½	7½	7½	7½
Burnley	10	9½	9½	9½	8	9	9½	7	7	7
Burton-on-Trent	9	9	9	9	8½	9	8½	6½	6½	6½
Bury	10½	10½	10	9	9½	10	9	6	6	6
Cambridge	9½	9	9	9½	9½	9½	7½	6	6	6
Canterbury	8½	8	8	10	—	8½–9	6½	5	5	5
Cardiff	9½	9½	9½	9½	9½	9½	8½	7	7	7
Chatham	8	9	9	9	9	9	7	6	6	6
Chelmsford	8	7½	8½	9	—	7½	6½	5	5	6½
Cheltenham	8½	8½	8½	8½	—	8½	8	6	6	6
Chester	9½	10	9½	9½	9½	9½	8½	5½	6½–6½	5–5½
Chesterfield	9	9	9	8	9	8½	8½	5½	5½	5½
Colchester	8	8½	8½	9	8	9	6	5½	5½	5½
Coventry	10½	10½	10½	10½	9½	10½	8½	7½	7½	7½
Crewe	7	8	7½	9	8	8	7½	5	5½	6
Darlington	9½	9½	9½	10	10	9	8½	6½	6½	6½
Derby	9½	9½	9	9	9	9	8	6½	6½	7
Doncaster	9½	9½	9	9	9	9	8	6½	6½	7
Dudley	8½	8½	8½	8½	8½	8	7½	5½	5½	5½
Durham	9	9	9½	9	10	9	8½	6	6	6½
East Glamorgan and Monmouthshire Valleys	9½	9½	9½	9½	—	—	8½	6½	6½	6½
Exeter	8	8½	8	8½	7½	7½	7	5½	5½	5½
Folkestone	8½	8½	8½	9	8½	8½	7–7½	6½	6½	6½
Gloucester	8	8½	8½	8	8	8½	8	6	6	6
Grantham	8	8	7½	7½–8	7½–8	7	6½	5	5	5
Grays	—	10	10	—	—	9½	8½	7	7	7
Grimsby	9	9	9	9	9	8	8½	7	7	7
Great Yarmouth	8	8	8	—	8	8	6½	5	5	—
Halifax	10	10	9	8½	8½	9	8½	7	7	7
Harrogate	9½	9½	9	9	8	9	8½	6½	6½	6½
Hartlepools	9	10	9½	10	10	10	9	7	7	7½
Hastings	8½	8	8	8½	8	8	7	6½	5½	6½
Hereford	8	8	7½	8½	8	7	6½	5½	5½	5½
Huddersfield	10	9½	9½	9½	10	9	8½	7	7	7
Hull	10½	10	10	10	10	9½	8½	7½	7½	7½
Ipswich	8½	8½	8½	9	9	8½	7	5½	5½	5½
Lancaster	10	10	9	9	9	9	9	5½	6	6
Leamington Spa	9	9	9	8½	9	8½	8	6	6	6
Leeds	10	10	10	10	9	10	8	7½	7½	7½
Leicester	9½	9½	10	10½	9½	9½	9	7	7	7½
Lincoln	9	8½	8½	9	8	8½	8	6	5½	6
Liverpool	11	11	11	11	10½	11	9½	7	7	7
Llanelly	9½	9½	9½	8½	9	8½	8	5½	5½	5½
London	11½	11½	11½	11½	—	1s.	9	8	8	8
Loughborough	9	8½	8½	9	9	8½	7½	5½	5½	5½
Luton	9½	8½	8½	8½	9	8½	7½	5½	5½	5½
Maidstone	9	9	9	9	9	9	8	6	6	6
Manchester	10	10½	10½	11	10	10	9½	6½	6½	7½
Mansfield	8½	9	8½	8½	—	8½	8	6	6	—
Merthyr Tydfil	9½	9½	9½	9½	8½	9	8	6½	6½	6½
Middlesbrough	9	10	9½	10	10	10	8½	7	7	7½
Newcastle-on-Tyne.	10½	10½	10½	10½	10	10	9	7½	7½	7½
Newport, Mon.	9½	9½	9½	9½	8½	9½	8½	6½	6½	6½
Northampton	9	9	9	9	8½	9	8	6	6	6
Norwich	8	8½	8½	8½	8	8½	7	5½	5½	5½
Nottingham	10	10	10	10½	9½	10	9	7½	7½	8
Oldham	10½	10½	10½	10	9	10	9½	7	7	7½
Oxford	9½	9	9	9	8	9	8	6½	6½	6½
Plymouth	9	9	9	9	9	9	7½	6	6	6
Pontypridd	9½	9	9	9½	9	9	8	6½	6½	6½
Portsmouth	9½	9½	9½	9½	—	8½	7½	7	7	7
Preston	10½	10½	10	9½	9½	10	9½	5½	6	6½
Reading	8½	9	9	9½	—	9	7½	6	6	6
Rochdale	10	10½	10	10	8½	9½	9	7	7	7½
Rochester	8	9	9	9	9	8½	7	6	6	6
Rugby	9½	9½	9½	9½	8	9½	8½	6	6	6
St. Albans	9	9	9	9–10	9	9–10	8	6½	6	6½
St. Helens	9	9½	10	9½	9½	9½	9½	6	6	6
Scarborough	8½	9	8½	8½	8	9	8	6½	6½	6½
Sheffield	10½	9½	9½	9½	9½	9½	8½	6½	6½	6½
Shrewsbury	8½	8½	8½	9½	—	8½	7	5½	5½	5½
Southampton	8½	9½	9½	8½	—	9½	8½	6½	6½	6½
Southend-on-Sea	9	9	9	9	P'cework	9	7	6	6	6
Southport	10	10	9½	9½	9½	9½	9½	6½	6½	6½
South Shields	10½	10½	10½	10½	10	8½	9	7½	7½	7½
Stockport	10½	10	10	10½	9	10	8½	6	6½–7	7½
Stockton-on-Tees	9	10	9½	10	10	10	9	7	7	7½
Stoke-on-Trent	9	9½	9	9	—	8½	8½	6	6	—
Stroud	7½	7½	7½	7½	7½	7½	7	5	5	5
Sunderland	10	10½	10	10	10	9	9	6½	6½	7
Swansea	9½	9½	9½	9½	8½	9	9	6½	6½	6½
Taunton	7	7	7	7	—	6	6½	4½	4½	4½
Torquay	8	8	8	8	8	8	8	6	6	6
Wakefield	9½	9½	8½	9½	8½	9	8	7	7	7
Walsall	9½	9	9	9	8½	9	8	6½	6½	6½
Warrington	8½	9½	9½	10	8½	9½	8½	5½–6	6	6-6½
West Bromwich	10	10	9½	9½	—	9	8	7	7	7
Wigan	10	10½	9½	9½	9	9½	9½	7	7	7
Windsor	9	9	9	10	—	9	—	6	6	6
Wolverhampton	9½	9½	9½	10	8	10	8	6½	6½	6½
Worcester	8½	9	9	9	8½	9	7½	6	6	6
York	9½	9½	9	9½	9½	8½	8	6½	6½	6½

The mason's rate given is for bankers; fixers usually ½d. per hour extra.

wing by adding twelve more bedrooms and an oratory. The wing is built of stone from the local site, with facings of Huddersfield stone, and there are leaded lights and casements in keeping with the rest of the buildings. In addition there is a staff-house, with nine bedrooms for the staff and six rooms for the steward. The whole of the metal casements (totalling about 150) and leaded lights were made and fixed complete by Mr. Chas. E. Steel, Tudor Studios, York-place, Leeds. The architect was Mr. H. S. Chorley, Diocesan Surveyor, of Park-place, Leeds.

TRADE NEWS.

Boyle's latest patent "air-pump" ventilators have been applied to the Engineers' Institute, Foleshill-road, Coventry.

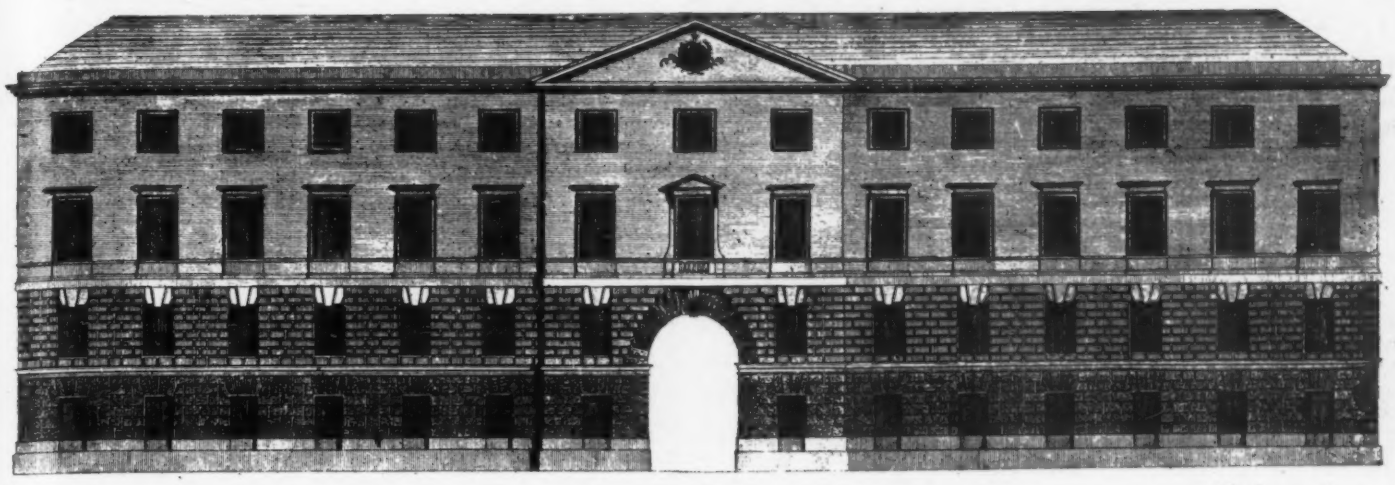
In our advertisement columns this week there appears an announcement by Messrs. Rogers, Welch, & Co., Ltd., of Page-street, Westminster, S.W. It will be within the recollection of our readers that this firm was granted a licence by the Board of Trade to manufacture the German cement waterproofer, Ceresit, and they are placing it on the market under the name of "Prufit" ("Ceresit Brand"). Their announcement this week gives a list covering the greater part of the four kingdoms of former Ceresit agents who are now acting for "Prufit."

WAGES IN THE BUILDING TRADE.

Barrow-in-Furness.—At the annual meeting of the Northern Centre Board of Conciliation for the Building Trades an appeal was heard from the Barrow joiners for an advance in wages and a reduction in the summer working hours. The application had been deferred from the meeting of the Board held on February 17, 1914. On behalf of the operatives it was stated that whilst they fully considered themselves entitled to the advance twelve months ago, the demand for joiners, together with the increased cost of living to-day, fully justified their application. With regard to their notice to revise the summer working hours, they were desirous of amending the rule to provide for a forty-eight hour working week instead of fifty-four for the same aggregate wage. Regarding the rule *re* walking time, they stated that their application was that the starting place for Abbey-road and that direction should be the White House, instead of Furness Park-road, their reason for this alteration being that practically the whole of building operations were now in the Abbey-road direction, and the ordinary working man, owing to the situation of his residence, was now compelled to walk a further distance to his place of employment. On behalf of the employers it was claimed that the present time was not opportune to concede any advance to the joiners. With regard to the hours of labour, they had no desire to disturb the present arrangement, but if the operatives were prepared to consider a reduced working week for the same rate of wages, they had no doubt that the Employers' Association would be prepared to make some concession to enable their rules to work more in uniformity with other trades. In regard to the proposal to amend the walking time rule, they asked the Board not to concede the operatives' claim, as practically all other trades were working to the same boundaries, and they had no desire to disturb any uniform working arrangement. The employers were quite in sympathy with any movement for shorter working hours, but they called attention to the exceptionally long hours worked by the joiners in the winter months, and suggested that any revision of working hours should also apply to the winter months. Considerable discussion ensued, after which it was unanimously agreed "Not to entertain any alteration to Rule 5 *re* starting places." On the motion of the Chairman, seconded by the Vice-Chairman, it was unanimously resolved :—"That the circumstances under which this appeal is presented do not warrant any alteration, and consequently the Board cannot entertain any of the operatives' proposals. At the same time, the Board wish to state that if the demand of the operatives for a reduction in hours had also included a corresponding reduction in the winter months, the Board would have felt disposed to advance wages in the summer months to 10d. per hour (making a uniform rate of 10d. all the year round), with a reduction in the working hours to fifty per week in the summer months and forty-four in the winter months."

BRITISH TRADE.

We have received a booklet written by Mr. Percy A. Reuss, of Sheffield, entitled "The Reorganisation and Extension of British Trade," in which it is stated that a company is shortly to be formed to assist manufacturers in their efforts to extend their trade, and which will supply the necessary organisation. Mr. Reuss has also written a leaflet on the question of an industrial bank. The company is primarily a patriotic one, and its work on behalf of manufacturers is of a national character. Those who are interested in this question can obtain copies of these booklets from Messrs. Septimus Short & Co., chartered accountants, Cairns-chambers, 19, St. James-street, Sheffield.



W. Robinson Archit.

West Front of the new Excise Office in London.

T. Robinson del. et sc.

Feet 0 5 0 10 20 30 40 50

WILLIAM ROBINSON.

A CERTAIN authority on eighteenth-century architecture remarked to the writer a short time since that "it would be interesting if an account of the vanished examples of the Classic tradition were to be collated, and possibly illustrated, from the collections of prints and drawings in the various museums and libraries." The task outlined by this authority is a feasible one, but it would entail very arduous labour for an author, and it would need an enterprising publisher to find a market. Nevertheless, it is a matter of common knowledge that the fame of many of the best contributions in the great style is to-day almost legendary. The folio volumes of eighteenth-century architecture contain line illustrations showing the structure of matured Palladianism, the pages of the *Gentleman's Magazine* amplify the designs, with concise obituary notices of the authors; but most of us are content to read and reread the obvious picture presented by those groups of buildings which are still in being. This method of imbibing one's artistic knowledge at face valuation is undoubtedly a good one; but if such opportunities exist as those offered by the famous Crace and Crowle Pennant collections in the British Museum, with their infinitude of illustrations, not only of architecture but of all the concomitant incidents of history, then surely it is wiser to take a leaf from the old painters' maxim and "see nature at its best by studying other paintings."

The illustration of the Excise Office shown above is taken from the twelfth volume of the Crowle Pennant Collection, page 172. Maitland's "London," published in 1775, plate 125, gives a replica. It is a somewhat bland façade, 180 ft. in length, presumably of Portland stone, for the cost approached £37,407 18s. 7½d., with an extra of £8,000 for further land. At the third quarter of the eighteenth century such was the universal acceptance of the Palladian theory that quite a number of minor architects were able to produce elevations of distinction and taste, although the work was sometimes uniformly dull. For many years the Excise Office in Old Broad-street was attributed to the elder Dance; others credited the genius of young Gandon with the west façade. The real author was William Robinson, a native of Durham, who came to London some time about 1744, and in 1746 was appointed, at the early age of twenty-six, to the then enviable position of clerk of the works to Greenwich Hospital, in succession to J. James. Robinson's experience of fluctuating taste was an acute one. In 1763 he is found working under the direction of "Athenian" Stuart, superintending the erection of the infirmary, and it is probable that he witnessed the building of the exquisite chapel by the same master. And for twenty-five years—1750-75—he assisted the ubiquitous Horace Walpole in carrying out part of Strawberry-hill. During part of the foregoing period—1755-62—Robinson was clerk of the works of St. James's, Whitehall and Westminster, and after 1766 he became Secretary to the Board of Works, Board Clerk, and Clerk Itinerant, as well as surveyor to the buildings of the Board of Customs of the Port of London. Robinson was the predecessor of Sir William Chambers for the erection of a block of Government buildings on the Savoy site—some original sketches of this scheme are preserved in the Soane Collection. On his death, however, Chambers, who had had the loan of these plans for the continuance of the scheme, discarded them and drew up others for the new buildings at Somerset-place. Robinson's chief assistant, Brown, became clerk to Sir William Chambers. *Notes and Queries* some years ago contained the following information concerning Robinson's authorship of the projected Savoy plans:—"Joseph Baretti's 'Guide Through the Royal Academy,' published in 1780, is, I believe, the first work or pamphlet describing Somerset House, or what was completed of it at that date. Baretti's rendering reads:—

"The late Mr. Robinson was the person first appointed to conduct this great edifice, and the buildings were to be erected in a plain manner, rather with a view to convenience than ornament.

Then it was decided to make it a monument of the taste and elegance of His Majesty's (George IIIrd) reign. Mr. Robinson made some attempts upon this double idea, but he dying before anything was begun, or any of the designs compleated, Sir William Chambers was, at the King's request, appointed to succeed him in October, 1775, and all Mr. Robinson's Designs were delivered to him; of which, however, he made no use, as he thought of a quite different disposition; nor is there the least resemblance between his Designs and those of Mr. Robinson, all of which I have more than once seen and considered with sufficient leisure and attention."

Robinson died suddenly on October 10, 1775, at his residence in Scotland-yard, and was buried in the chapel at Greenwich Hospital.

At the present distance from the picture presented by the events of the brilliant eighteenth century, it is possible to place the works of the lesser-known men in relation to those who came into the forefront of prominence, and to justly value the achievements of all.

NEW COMPANIES.

THE undermentioned particulars of new companies recently registered are taken from the Daily Register compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, Chancery-lane, W.C.:—

FORTI-LITHIC CONCRETE COMPANY, LTD. (139,355), No. 261, High-street, Smethwick, Staffs. Registered February 16. Manufacturers of and dealers and workers in waterproofing powders or liquids, cement, lime, plasters, whiting, artificial stone, concrete (plain and reinforced), paving in wood blocks, asphalt, and granolithic, and builders' requisites, etc. Nominal capital, £500 in £1 Ordinary shares.

F. W. APPLEYARD & SON, LTD. (139,373), No. No. 2, Lynn-street, West Hartlepool. Registered February 17. Wholesale and retail, general and furnishing ironmongers, iron merchants, builders' merchants, electrical engineers, etc., and to enter into an agreement. Nominal capital, £1,500 in £1 shares.

NEW OPENINGS FOR IRON AND STEEL SCREWS, NAILS, AND BOLTS.

THE total exports of the materials dealt with in this article from Germany were in 1912 nails, £124,700; wire tacks, £518,800; screws, bolts, and rivets, £535,150; nuts, washers, and insulator supports, £62,500; and from Britain, nails and rivets, £388,400; screws, £294,200; bolts and nuts, £518,800, forming a total slightly less than that of Germany, whose total reached almost 2¼ millions; while Austrian exports were in all some £86,000.

The most important destinations of these various exports are shown in the following table:—

Country to which Exported.	Exported from Germany (1912).	Exported from Austria-Hungary (1913).	Exported from United Kingdom (1913).
	£	£	£
Australia	13,200	—	238,000
British South Africa	12,200	—	99,400
British India	27,050	13,640	243,600
Straits Settlements	17,150	—	16,900
Norway	16,050	—	12,600
Sweden	11,550	—	10,300
Denmark	76,150	—	9,900
Netherlands	98,200	570	24,600
France	17,950	230	8,300
Switzerland	60,900	2,610	1,500
Spain	28,250	860	10,200
Italy	60,900	11,600	2,900
Greece	2,850	650	2,300
Servia	8,650	9,470	—
Bulgaria	29,150	4,910	300
Roumania	19,450	10,630	1,200
Russia	58,900	300	14,400
Turkey in Europe	27,200	6,320	3,400
Turkey in Asia		15,530	2,500
Egypt	13,350	1,240	14,600
Dutch East Indies	43,950	840	7,200
Siam	4,900	—	4,000
China	13,650	2,180	36,000
Japan	51,500	—	39,300
Brazil	24,550	420	28,000
Argentina	42,500	100	70,600
Chile	20,320	110	34,200
United States	6,100	130	4,700
Cuba	3,950	—	4,700
Total to above markets	810,550	82,360	945,600

A study of the above figures shows that our largest markets are Australia, South Africa, and India; and that in the Straits Settlements, Norway, and Sweden the trade is fairly equally divided between Germany and ourselves. In Western Europe Germany possesses most of the trade; in South-east Europe German and Austrian trade predominates; while in China, Japan, South America, Russia, and Dutch East Indies Germany holds valuable markets. It will, therefore, be apparent that in a sphere of trade with which Britain is specially able to deal readily some very valuable fields await attention.

As regards Germany's specific exports a study of further tables in the Board of Trade brochure indicates that for wire nails the chief markets of this country are Japan, £47,000; Denmark, Netherlands, and Bulgaria, each about £25,000; and British India, £22,000. For other kinds of special nails the Netherlands, Russia, and Argentina represent amounts

between about £14,000 and £10,000. For screws, bolts, and rivets, Italy, £50,000; Switzerland, £46,000; Netherlands, £45,000; Denmark, £42,000; Russia, £26,000; and Argentina, £25,000. For nuts and washers, Denmark, about £9,000; Italy and Denmark, upwards of £5,000; followed by Brazil and Switzerland.

The Austrian markets are very much smaller, much the largest field being for wire nails to Turkey in Asia, and British India, each over £13,000; screws and bolts to Italy nearly £7,000; to Roumania, £3,600. Austria's export trade in wire nails, the whole of which exceeds £40,000, far outstrips that in other items under discussion, and, apart from the exports to British India and China, practically the whole of the trade is placed in Italy, South Eastern Europe, and the Levant.

As regards our own exports, more than half go to British Dominions and Possessions, and the fields which appear to deserve cultivation are Western and South-eastern Europe; while the far East and South American markets also offer promising fields. The following table shows the specific exports of Britain to the markets touched by Germany and Austria:—

Country to which Exported.	Nails and Rivets.	Screws.	Bolts and Nuts.
	£	£	£
Australia	59,900	62,000	116,100
British South Africa	25,100	24,100	50,200
British India	70,500	81,000	92,100
Straits Settlements	5,900	1,200	9,800
Norway	4,400	7,100	1,100
Sweden	3,400	6,500	400
Denmark	2,800	6,500	600
Netherlands	11,400	10,400	2,800
France	6,500	600	1,200
Switzerland	1,500	—	—
Spain	1,900	700	7,600
Italy	1,500	100	1,300
Greece	1,700	—	600
Servia	—	—	—
Bulgaria	300	—	—
Roumania	700	400	100
Russia	7,700	5,300	1,400
Turkey in Europe	2,800	100	500
Turkey in Asia	1,300	100	1,100
Egypt	6,000	1,600	7,600
Dutch East Indies	2,000	300	4,900
Siam	1,400	800	1,800
China	14,700	10,400	10,900
Japan	14,700	15,400	9,200
Brazil	7,800	7,900	12,300
Argentina	11 100	9,400	50,100
Chile	9,900	5,200	19,100
United States	3,900	200	600
Cuba	2,100	1,000	1,600
Total to above markets	282,900	257,700	405,000

Turning to particulars of individual markets in

British South Africa.

H.M. Commissioner remarks that our trade is declining in the face of competition owing to the failure of British manufacturers to meet the special demands of customers, and to produce the cheaper quality of goods and pack them in convenient and attractive ways. The not wholly unreasonable demands for cheap goods of second quality by colonists whose resources are slender and tenure doubtful has been emphasised before in these articles; and the fact that it is stated to extend to such goods as form the subject of this article should certainly give food for reflection as showing the reality of the general contention. The Board of Trade give some particulars of German nails which find a ready sale, and these should be referred to by those interested.

Australia.

Out of total imports amounting to £332,258 in 1912, we contributed £265,767, and Germany only £14,962. We have, therefore, only a small rivalry here, but it is a growing one, and is chiefly concerned with nails.

New Zealand.

Here, again, methods of packing receive too little attention from our exporters. The popular receptacle is the keg, and to send goods in metal drums or wooden cases is to place them at a disadvantage. With regard to the goods themselves it is remarked that British tin-tacks are often badly pointed. These may appear to be almost trivial matters, but if our manufacturers wish to hold their own and especially to acquire new fields, it is just the small things which must be carefully regarded, as when competition is keen there are no large differences.

British India.

Goods exported by Britain to British India showed a remarkable increase between 1912 and 1913, the value being £86,228 and £144,033 in these respective years; whether such extension of trade is merely sporadic or representative of a permanent demand does not appear from the report. During the former year Germany and Austria together exported some £57,000, and in 1913 £63,000.

Hongkong.

Wire nails 1½-3 in. long are mostly in demand in Hongkong, the annual imports amounting to 30,000 barrels containing 133⅓ lb. each. Germany enjoys a fair proportion of this trade.

Straits Settlements.

The German Consul reporting in 1911 refers to the increase in trade in which his country largely participated, while British imports showed a decrease. The fact that Germany's market in that year represented nearly £21,000, and ours less than £2,000, bears out these statements. This position is stated by our own Board of Trade to be due to British supineness.

Egypt.

Nails, which fluctuate much in price, are obtained in Egypt from France for the better, and Belgium for the inferior, qualities. Screws are imported equally from France, Belgium, and Germany, while Britain's field is confined to a few specialities. The small market for our supplies in this field of British influence has been commented upon in previous articles.

Servia.

Servia's small imports are mostly supplied by Austria; out of some £12,000, Austria was responsible for £7,000, and Belgium and Germany for the rest.

Roumania.

The London Chamber of Commerce states that horse-shoe nails, which are not made in Roumania, are in good demand; as are also screws and rivets, although these are manufactured locally. France, Germany, and Austria supply most of these goods, and rebates amounting to as much as 60 per cent. are often given on them.

Bulgaria.

The trade with this country is chiefly in the hands of Germany and Austria, though Belgian goods are also imported. The increasing use of steel and concrete construction, however, has not made the recent requirements in nails commensurate with building developments.

Greece.

The better qualities of wire nails are supplied by France. German, Austrian, Belgian, Italian, and also cheaper French goods hold the rest of the markets, though unsuccessful attempts in the wire nail trade have been recently made by the United States and Holland. Prices for these nails, c.i.f. Salonica, were in 1912 7s. 6d. to 8s. 11d. per cwt. in 100 kilo. (220 lb.) kegs, subject to 3 per cent. cash discount.

Turkey.

The imports of wire nails, which amount to two or three hundred truck loads annually, come mostly from Belgium and Austria. All numbers from fifteen upwards are in demand, packed in 30 and 50 kilo. cases, and quoted c.i.f. Constantinople, and payment is made against shipping documents. Screws come from the above countries and from Germany.

Turkey-in-Asia.

Austria, Belgium, Germany, France, Italy, Sweden, Spain, and the U.S.A. all contribute to the trade in Asia, of which considerable detail is given in the report under review. Out of a dozen import centres referred to, Smyrna may be cited as importing some £20,000 of French wire nails and £6,000 of other nails. Conditions of packing should be carefully attended to by competitors.

Morocco.

A good market for nails and tacks, representing about 150 tons, exists at Tangier, prices ranging from 17s. 7d. to 24s. per 100 kilos. in cases containing ten packets of 5 kilos. each. Some 10,000 gross of screws are also consumed. Packing should allow of small local distributions and a good deal of handling.

Dutch East Indies.

Building activities produced a great increase in imports in 1912, the number of 50 kilo. casks of nails taken by Java for example, rose from 88,000 to 143,000 from 1911 to 1912. In Sourabaya, again, owing to the increase of population, which is reported as likely to continue for some years, the demand for nails for house building provides a new and promising field.

Colombia.

Wire nails in small packets are imported from the United States and Germany at strictly competitive prices, and for once the latter countries' method of packing appears to be the less favoured.

Chili.

Chili favours cut nails which come from Germany and the United States, and prices should allow for a 6 per cent. discount at sixty days. Five-pound packets in twenty-packet cases are preferred.

Japan.

Nails come to Japan from many sources, Germany's trade amounting to some £65,000, and Britain's to £7,500; bolts and nuts come chiefly from Britain, £21,000; and Germany, £14,000. The consumption in these latter goods decreased, however, by one-third from 1912 to 1913.

From the above review it will be seen that Britain holds her own in the large Colonial markets with ease, and has a fair share in the Scandinavian trade; but in Western Europe, Denmark, Netherlands, France, Switzerland, and Spain large German fields await our manufacturers; which is also true of the markets of the Far East, while in South-eastern Europe and the Levant much Austrian trade should be procurable.

ELECTRIC POWER AND LIGHTING.*

I WELL remember the period round about 1886 and 1887 when to come across an electric motor was quite an event, and no one would have thought of using electric motors for driving a factory, and yet in the period of only twenty-seven years or so one sees the development from an article of purely scientific interest to a machine of universal application in every industry one knows of.

The position of electric power in this country is such that at the present time electric motors to the extent of upwards of 1,081,500 horse-power are connected to the various electric supply concerns. This huge figure does not include the many factories, hotels, or other buildings having their own private generating plant. As an instance of the development going on, the increase during 1913 in the horse-power of electric motors connected to the street mains was something like 20 per cent.

One is next inclined to ask why is it that electric power has thus advanced? Is it merely a question of cheapness, or has it any other special virtue over other competitive forms of power, such as steam engines or gas engines? It has many virtues which are essentially its own, but I will here mention only three:—

Ease of Transmission.—With any other form of power one has to employ lines of revolving steel shafting, with pulleys and belts, in order to transmit the power from the engine to the machine. With electricity one has none of this, but merely fixed cables or wires, which take up an incomparably small amount of space and suffer very little in deterioration, because they are stationary. Not only is the case of transmission so apparent within factories or other buildings, but likewise, of course, in the transmission of electric power over long distances, as, for example, at Niagara Falls, Victoria Falls in South Africa, and Fall of Foyers in Scotland, belonging to the British Aluminium Company, and, of course, hundreds of other cases, not only transmitting the power from waterfalls, but also from large steam-driven central power stations situated near the coal-fields of Britain, as, for example, the Midland Electric Power Company at Ocker Hill, near Birmingham; the Lancashire Electric Power Company, and others.

Control.—The speed of the driven machinery, no matter whether it be a large printing press costing some £12,000, or

* Part of a public lecture entitled "Some Interesting Applications of Electric Power and Lighting," delivered at the Willesden Polytechnic by Mr. Frederic H. Taylor, A.M.I.E.E., A.M.I.Mech.E.

whether it be the domestic sewing-machine, requiring about 1 cat-power to drive it, can equally well be controlled by the mere act of pressing a button or moving a lever. The simplicity and certainty of the control cannot well be approached by any other form of power. Electric-power driving has during the last few years found great favour amongst the great printing industries of London and other large towns. One might here mention the magnificent electric-power equipments of the London *Daily Mail* and *Evening News*, *Lloyd's News*, the *News of the World*, *Kelly's Directories*, and many others.

Convenience of Application.—A machine which is to be driven by an electric motor can be put anywhere and in any position. It can be driven singly or along with others. The motor can be put anywhere and anyhow—on the floor or on the ceiling, on the earth or under the water.

These are but a few of the causes which have resulted in the growth of electric power. A continual reduction in its cost has, of course, been of immense importance in fostering its application.

The great result of the use of power instead of hand methods in the industries has been the concentration of manufacturing processes in large factories, which in themselves tend to concentrate in certain localities simply because such localities have conveniences of transport by rail or water, cheap labour, and possibly cheap land, etc. Such a state of affairs is looked upon by social reformers as being exceedingly bad, and one hears of a general desire to send people "back to the land." The ready and easy means by which power can be transmitted electrically over long distances to outlying towns and villages from large central electric-power stations has been looked upon as the cure for all the evils attendant upon a crowded town life. Whether this will ultimately prove to be the case I hardly care to prophesy. It is certain there is no electrical or other engineering reasons why one should not distribute power electrically to the citizen in his own home, and let him do his work there under his own home-made conditions, but I much fear that these latter would soon become fairly bad.

With this brief review of the general situation, I would like to turn to the artful little machine which does the job—that is, the electric motor. Now, before I go on to point out some of the applications of electric motors, I think you will like me to give you just a brief explanation of the principles underlying the action of an electric motor. Let me first point out that about the years 1819 to 1827 many important discoveries were made in the then infant sciences of electricity and magnetism. Arago, Oersted, Ampere, Ohm, and Faraday showed by their different experiments in different years how closely magnetism and electricity were related to each other, and, were it not for these, electric motors and hundreds of other kinds of apparatus would never have been known to the world.

Every electric motor has, of course, two main parts, *i.e.*, the moving part, which by revolving gives out the power and does the work, and the fixed part, which consists of the electro magnets.

An electric motor has many points of interest which I have not yet mentioned. It can be of any size, from a tiny machine held in one's hand to one developing several thousand horse-power, and can work at any speed from several thousand revolutions per minute down to a slow crawl round. It can go either way round and reverse instantaneously if need be. It can be made watertight or gastight if required.

Electric Travelling and Lifting.—One of the most important of modern uses for the electric motor is in connection with transporting and carrying goods about the yard, or wharf, or factory of a big works. In the course of manufacture goods have to be moved from one department to another, and ultimately packed in vans, railway trucks, or ships. Much of this work is now done by overhead electric transporters, running round on the flange of a girder, hung from the roof or otherwise supported sufficiently high up to be out of the way. A vast amount of labour, time, and money is thus saved over the old-fashioned methods, wherein the human hands and the wheelbarrow were constantly employed.

You would often be surprised to hear of some of the queer uses to which electric hoists and electric motors are now put. I know of a crematorium where electricity is used for raising the corpses from the ground level on to a railway siding, constructed by a viaduct, a use you would not readily think of.

Lifting Magnets.—I would like now to describe to you another and most interesting application of the combined forces of electricity and magnetism. I mean electric lifting magnets.

To the time-honoured names I have mentioned to you already should be added that of Dr. Wm. Gilbert, of Colchester, Court Physician to Queen Elizabeth, who died in London in 1603, after many years spent in fruitful experiments in magnetism, from which he founded his theories underlying magnetic actions.

About ninety years ago Sir Wm. Sturgeon in England designed electric lifting magnets. The magnetism caused by the electric current flowing through the turns of copper wire penetrates into space and impresses on the surrounding air a peculiar stress, and anything in the form of iron or steel in the neighbourhood at once becomes magnetised. Whilst large lifting magnets have always been interesting appliances, many years went by before they were made in a commercial form, owing, no doubt, to the fact that in the early days suitable dynamos for generating the electric current were not available.

Lifting magnets as used in various branches of trade are considerably different in their outside appearances to the one used by Sturgeon. They are made to stand very rough usage, and to do duty in all sorts of places, in fair weather or foul.

They consist of a steel shell entirely surrounding a large electric coil, the coil being held in position by means of an insulating compound, and also supported mechanically. A shield of non-magnetic material (for instance, phosphor bronze or manganese steel) encloses the coil at the bottom of the shell, the coil shield being in turn fixed by an inner and an outer ring, forming renewable pole shoes. Three suspension hooks and a box containing the terminals of the coil are fixed to the top.

The steel shell is of special high permeability steel, such as is used in the construction of electric dynamos. The mushroom shape of the shell is strengthened up by large ribs outside the shell to allow the magnet to be handled roughly, and to prevent the cracking of the shell should the magnet be inadvertently dropped too quickly by the crane driver into a pile of large steel ingots.

The duty this particular magnet is doing is very interesting. It is salvaging old scrap iron from the bottom of the River Thames in London Docks.

These magnets, it is said, will lift from six or seven times their own weight when very large, say 5 ft. diameter, and up to ten or even twenty times their own weight when of quite small diameter.

Interesting Applications of Electric Lighting.

With a view to lightening my lecture, which has been on a somewhat heavy subject, I now intend to deal with some interesting applications of electricity in lighting. Perhaps no branch of the work has attracted so much attention during the last few years as that of the lighting of our public streets. Deputations from London have visited other large towns to discover, if possible, points worth imitating, competitive tests have been made between gas and electricity, and figures published as to costs and other results, and, happily for the general public, the great benefit obtained has been a better service, for never has our public lighting been as good as it is to-day. If any proof were needed, I think we have had it under the present conditions of war. What Londoner can have failed to notice the wonderful effect recently produced in our streets whilst some half of the public lamps were switched off and the other half at least with their globes black painted round the upper part of the globe, and how wonderfully restful the contrast has seemed, broken only at intervals by the haunting rays of the Admiralty searchlight, reminding us of the horrible realities of a nation at war!

Directing our thoughts to the normal conditions in times of peace, the most noticeable improvement which has been made of recent years in London has been the use of centrally-suspended street lamps. The great advantages, of course, are that you get a more uniform and a better illumination on the roadway, where the quickly-moving traffic is, and the footways are not obstructed by posts.

The Lighting of Public Statues.—In a paper recently read before a London society it was claimed that memorials in our great cities ought to be illuminated, and they should be "memorials by night as well as by day."

Electric Lighting for Airship Signalling.

I have heard that Germany in 1909 adopted the Frankenberg system of indicating their whereabouts to airships by certain letters, marked out in bright points on convenient buildings, and of sufficient size to be seen even by aviators at a considerable height. Silvered glass spheres have sometimes been used for this purpose.

The ideal solution of the problem would involve the use of signs which, besides being visible by day, should be luminous by night. A German inventor has devised a method of doing this by the aid of holophane prisms.

PATENTS.

APPLICATIONS PUBLISHED.*

21,630 of 1913.—Williams & Williams, Ltd., and Alan Heathcote Williams: Apparatus for notching and shaping the jointing surfaces of intersecting bars of metal window-frames and the like.

3,066 of 1914.—Jane Thwaites: Device for thawing liquids in pipes and the like.

3,165 of 1914.—Robert Harry Unsworth: Excavators and the like.

3,417 of 1914.—Henry Caley: Wooden beams, cylinders, or rollers.

3,625 of 1914.—Oliver Gregory Trigg: Cement.

4,409 of 1914.—John Marshall Siddell: Spring roller-blind apparatus.

5,356 of 1914.—Erland Thaulow: Fluxes for use in the welding or soldering of aluminium and alloys containing it.

5,659 of 1914.—Percy Geikie Donald: Rainwater pipes or the like.

8,403 of 1914.—John Schofield Porter: Roof glazing.

12,435 of 1914.—Samuel Thomas and Leonard Samuel Henry Thomas: Docks, dock entrances, and entrance locks to docks.

12,907 of 1914.—Francis Walter Smith: Fire-extinguishing, alarm, and indicating apparatus for use on board ships and large buildings.

18,648 of 1914.—Herman Carl Hahn: Fire-escapes.

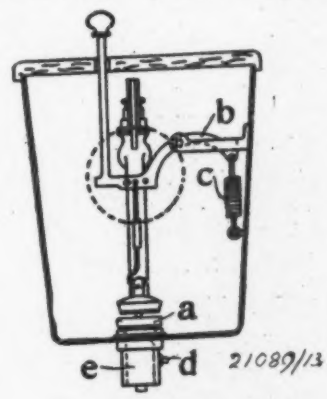
18,847 of 1914.—Planet Foundry Company, Ltd., and James Learmonth: Adjustable grate-fronts for domestic fireplaces and the like.

21,471 of 1914.—Guy Vincent Evers: Fireclay blocks for use in domestic firegrates.

SELECTED PATENTS.

21,089 of 1913.—William Anderson: Flushing apparatus.

This relates to a suction-valve flushing apparatus, in which a conical discharge valve *a*



is used and the rocking lever *b* is fitted with a spring *c*. To silence the discharge, a small

(*Continued on page* 236.)

*All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

List of Competitions, Contracts, etc.

For some contracts still open, but not included in this List, see previous issues. **Those with an asterisk (*) are advertised in this number:** Competitions, —; Contracts, iv., vi., viii., x.; Public Appointments, xx.; Auction Sales, xxii. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to assure accuracy, we cannot be responsible for errors that *may* occur.

Competition.

MARCH 31.—**Bradford.**—STREET PLANNING.—The Bradford Corporation invite designs for replanning of streets.

Contracts.

BUILDING AND PAINTING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

MARCH 8.—**Huddersfield.**—PAINTING.—Painting to the interior of the Weights and Measures Offices. Specifications of Mr. K. F. Campbell, Borough Engineer, 1, Peel-street.

MARCH 8.—**Little Thurrock.**—ALTERATIONS.—Alterations and additions to administration block at the hospital, Long-lane, Little Thurrock, two miles from Grays railway station, for the Orsett Joint Hospital Board. Quantities of the Board's Architect, Mr. C. M. Shiner, Gate House, High-street, Grays.

MARCH 8.—**Reading.**—BRIDGE.—Construction of a new timber bridge across the Portman Brook at the Guardians' Institution, 344, Oxford-road, Reading. Specifications of Mr. W. H. Oliver, Clerk, 32, Thorn-street, Reading.

MARCH 8.—**Silloth.**—SLATING.—Stripping and reslating of the schoolroom and out-offices for the Trustees of the Silloth Wesleyan Church. Particulars of Mr. J. Sutton, Caldew-street.

MARCH 9.—**Ashton-under-Lyne.**—PAINTING.—Painting at the hospital at Chambers-hill for the B.G. Specifications of the Steward at the hospital.

MARCH 9.—**Derby.**—BUILDINGS, ETC.—Erection of two buildings for providing bathing accommodation at the Workhouse; also tenders for painting the outside premises of the Workhouse and Infirmary. Quantities from Mr. F. C. Coulthurst, architect, 4, Albert-street, Derby.

MARCH 9.—**Sherborne.**—COTTAGES.—Erecting twenty workmen's cottages in Simon's-road, Sherborne, for the Sherborne U.D.C. Specifications of Mr. Duncan T. G. Brown, Surveyor, Council Offices, South-street, Sherborne.

MARCH 9.—**Watford.**—COTTAGES.—Erection of two pairs of semi-detached cottages at Abbots Langley for the Watford R.D.C. Specifications at the Council's Office, 9, Market-street, Watford. Deposit, £1 1s.

MARCH 10.—**Bingley.**—ADDITION.—Addition to offices, Main-street, Bingley, for the Bingley U.D.C. Quantities of Mr. H. Bottomley, Surveyor, Town Hall, Bingley.

MARCH 10.—**Hull.**—PAINTING.—Cleansing and painting of the central and branch police-stations, etc., in the city. Particulars at the City Architect's Office.

* MARCH 10.—**Portland.**—NEW OFFICES.—The Portland U.D.C. invite tenders for erection of new offices.

MARCH 11.—**Dewsbury.**—FITTINGS.—Construction of internal fittings in connection with the Health Department at the Town Hall. Specifications of the Borough Surveyor, Town Hall.

MARCH 11.—**Nottingham.**—COTTAGES, ETC.—Erection and completion of twenty-seven cottages and two blocks of tenements on site adjoining Pennyfoot-street and Newington-street for the Corporation. Quantities of Mr. Arthur Brown, City Engineer, Guildhall, Nottingham. Deposit, £2.

MARCH 12.—**Smallburgh.**—ALTERATIONS.—Alterations at the Workhouse, Smallburgh. Specifications of Mr. Fairfax Davies, Clerk, North Walsham.

MARCH 13.—**Hambridge.**—SCHOOL.—Erection of a new Council school at Hambridge for the Somerset C.C. Specification of the architects, Messrs. Samson & Colthurst, 1, Hammet-street, Taunton.

MARCH 13.—**Llanerchymedd.**—WORKMEN'S DWELLINGS.—Erection of fifteen workmen's dwellings at Llanerchymedd for the Twrcelyn R.D.C. Messrs. J. Owen & Thomas, architects, Holyhead and Menai Bridge.

MARCH 13.—**Macclesfield.**—CHIMNEY.—Erection of a chimney, 90 ft. high, at the Public Baths, Davenport-street. Quantities of Mr S. C. Baggott, Borough Surveyor, Town Hall.

MARCH 15.—**Dewsbury.**—SHUTTERS.—For closing of the alleys in the covered market by means of revolving shutters. Particulars of the Borough Surveyor, Town Hall.

MARCH 15.—**Pontypridd.**—PICTURE HOUSE, ETC.—Erection of a large picture house and shops at Pontypridd for the Pontypridd Palladium Company. Quantities of Messrs. Arthur Ll. Thomas & Gomer S. Morgan, architects, Pontypridd. Deposit, £2 2s.

MARCH 16.—**Hornchurch.**—PUBLIC OFFICES.—The erection of public offices for the Hornchurch P.C. Specification of Mr. William C. Allen, Clerk to the Council, Council Office, Hornchurch, Essex. Deposit, 10s.

MARCH 16.—**Morley.**—COAL STORE.—Erection of coal store at the Gasworks, Morley. Quantities of Mr. F. Turner, Borough Engineer, Town Hall, Morley. Deposit, 10s.

MARCH 16.—**Tweedmouth.**—COTTAGES.—Erection of six cottages at Tweedmouth for the North-Eastern Railway Company. Specification of Mr. Arthur Pollard, the Company's Architect, Irving House, Westgate-road, Newcastle-on-Tyne.

* MARCH 17.—**Andover.**—SCHOOL.—The Southampton C.C. invite tenders for erection of a new school for 353 children at Andover.

MARCH 18.—**Reading.**—CONVENIENCE.—Construction for the Corporation of public sanitary convenience for women, St. Mary's Butts. Specifications of Mr. John Bowen, Borough Engineer and Surveyor, Town Hall.

MARCH 18.—**Wallasey.**—WORKSHOP, ETC.—Erection of (*a*) workshop and men's room; (*b*) foundation for gas-engine and electric generator, at the Gasworks, Limekiln-lane, Wallasey, for the Corporation. Quantities of the Engineer and Manager, Mr. J. H. Crowther, Limekiln-lane, Wallasey.

* MARCH 19.—**Various Places.**—REPAIRS, ETC.—The Commissioners of H.M. Works, etc., invite tenders for execution of ordinary works and repairs to various buildings.

MARCH 22.—**Chelmsford.**—ENGINE-HOUSE.—Erection of an engine-house and incidental works at the Admiral's Park Waterworks for the Corporation. Specification of Mr. Percival T. Harrison, Borough Engineer, Municipal Offices, Chelmsford. Deposit, £2 2s.

* MARCH 22.—**Pembury.**—ENGINE-HOUSE.—The Tunbridge Wells Corporation invite tenders for erection and completion of a new engine-house.

* MARCH 22.—**Southampton.**—NEW MAP STORE.—The Commissioners of H.M. Works, etc., invite tenders for erection of a new map store.

NO DATE.—**Bradford.**—BUSINESS PREMISES.—Erection of a block of business premises in the centre of Bradford. Names to Messrs. James Young & Co., architects, 62, Market-street, Bradford.

NO DATE.—**Horden.**—EXTENSION.—The Seaham Harbour Co-operative Society, Ltd., invite tenders for extension of business premises at Horden. Applications to the architect, Mr. L. G. Ekins, Co-operative Wholesale Society, Ltd., West Blandford-street, Newcastle-on-Tyne.

NO DATE.—**Keighley.**—PAINTING.—Painting of twenty-four houses, outside only. Particulars of Mr. Midgley, builder, Keighley.

NO DATE.—**Lancaster.**—REPAIRS.—For building repairs at Bowerham Barracks, Lancaster, from April 1, 1915, to March 30, 1917. Contractors not on lists should apply to the Commanding Royal Engineer, Royal Engineer Office, 14, Elliot-street, Liverpool.

NO DATE.—**Liverpool.**—ALTERATIONS, ETC.—(*a*) Plastering and cementing at Kirkdale Homes, Westminster-road; (*b*) building alterations to the Rating Valuer's Office, Brownlow-hill. Specifications from Mr. Gaius W. Coster, Clerk to the Select Vestry, Parish Offices, Brownlow-hill, Liverpool.

NO DATE.—**Lonehead.**—COTTAGES, ETC.—Construction of five new cottages and steadings for smallholders and with the adaptation of the existing farm steadings on Pentland Mains Farm (1¼ miles from Loanhead station). Schedules of Mr. H. M. Conacher, Secretary, Board of Agriculture for Scotland, 29, St. Andrew-square, Edinburgh.

FURNITURE, MATERIALS, etc.

MARCH 8.—**Batley.**—MATERIALS.—Supply to the Corporation of flagstones, setts, pavors, and kerbs, sanitary tubes, cement, etc. Forms of tender from the Borough Engineer, Mr. Oscar J. Kirby, Town Hall, Batley.

MARCH 8.—**Bourne.**—GRANITE, ETC.—Supply to Bourne U.D.C. of 600 tons of granite and 500 tons of slag. Mr. S. R. Andrews, Clerk, Bourne.

MARCH 8.—**Cambridge.**—MATERIALS.—Supply to the Corporation of timber, paint, etc., stoneware pipes and fittings, Portland cement, gravel, brooms, etc. Forms of tender of the Borough Surveyor, Guildhall, Cambridge.

MARCH 8.—**Cheadle.**—MATERIALS.—Supply of road, paving, and other materials to the U.D.C. of Cheadle and Gatley. Forms of tender of Mr. F. R. Gibbins, A.M.Inst.C.E., Surveyor, Council Office, Cheadle, Cheshire.

MARCH 8.—**Durham.**—MATERIALS.—Supply to the Durham C.C. of road materials, tools, tar spraying, sanitary pipes, etc. Form of tender of Mr. Albert E. Brookes, County Surveyor, Shire Hall, Durham.

MARCH 8.—**Fleetwood.**—MATERIALS.—Supply to the U.D.C. of road, sewer, and other materials. Forms of tender of Mr. A. Cottam, Clerk, Town Hall, Fleetwood.

MARCH 8.—**Tyldesley.**—MATERIALS.—Supply of road, paving, and other materials to the Tyldesley-with-Shakerley U.D.C. Forms of tender of Mr. F. E. Jones, Surveyor, Council Offices, Tyldesley.

MARCH 9.—**Bollington.**—GRANITE SETTS.—Supply to the Bollington U.D.C. of 1,000 tons of granite setts. Forms of tender from Mr. H. W. A. Carter, Surveyor, Council Offices, Bollington.

MARCH 9.—**Dover.**—MATERIALS.—Supply of various materials to the Dover Harbour Board. Schedules of Mr. Martyn Mowll, Register of Dover Harbour Board, Castle-street, Dover. Charge, 2s 6d.

MARCH 9.—**Epsom.**—MATERIALS.—Supply to the Epsom U.D.C. of sewerage ironwork, tools, Portland cement, stoneware pipes and gulleys, etc., kerbing and channelling, setts, bricks, artificial stone paving, road materials, etc. Forms of tender of Mr. Edward R. Capon, Surveyor, "Bromley Hurst," Church-street, Epsom.

MARCH 9.—**Faversham.**—ROAD MATERIAL.—Supply to the Faversham R.D.C. of road materials. Form of tender of Mr. J. G. Chittenden, District Surveyor, Ashford-road, Faversham.

MARCH 9.—**Foleshill.**—GRANITE.—Supply to the Foleshill R.D.C. of granite. Forms of tender of the Surveyor, Council Offices, Foleshill.

MARCH 9.—**Huddersfield.**—MATERIALS.—Supply to the Gas Department of cast-iron pipes, natural bog ore, paint, coal stoppers, wooden purifier grids, fireclay goods, lime, tubes and fittings, etc. Forms of tender of Mr. Edgar S. Appleyard, Gasworks, Huddersfield.

MARCH 9.—**Paddington.**—TIMBER.—Supply to Great Western Railway Company of (*a*) pitch pine logs, rock elm logs, and Quebec yellow pine deals; (*d*) mahogany board and logs and black walnut butts. Forms of tender of Mr. A. E. Bolter, Secretary, Paddington Station.

MARCH 9.—**Preston.**—MATERIALS.—Supply to the Corporation of sewer, paving, and other materials. Form of tender of the Borough Surveyor, Town Hall, Preston.

MARCH 9.—**Rye.**—MATERIALS.—Supply of materials to the R.D.C. of Rye. Forms of tender of the District Surveyor, Mr. H. J. Elliott, Winchelsea, Sussex.

MARCH 9.—**Wincanton.**—ROAD MATERIAL.—Supply to the R.D.C. of Wincanton of basalt, granite, limestone, quartzite, and tar-macadam. Forms of tender of the District Surveyors, Mr. E. H. Knapman, Wincanton, or Mr. E. J. H. Padfield, Cole (near Bruton).

MARCH 10.—**Aberdare.**—MATERIALS.—Supply to the Powell Duffryn Steam Coal Company, Ltd., of various stores. Forms of tender of the Stores Manager, Aberaman Offices, near Aberdare.

MARCH 10.—**East Ham.**—MATERIALS.—Supply to the Corporation of road, paving, sewer, and other materials. Forms of tender of Mr. C. Eustace Wilson, Town Clerk, Town Hall, East Ham, E.

MARCH 10.—**Finchley.**—MATERIALS.—Supply to the U.D.C. of heavy castings, Guernsey granite and basalt, crushed shingle, lias lime, Buxton and grey lime, stoneware pipes and goods, etc. Forms of tender of Mr. E. H. Lister, Clerk, Council Offices, Church End, Finchley.

MARCH 10.—**Goole.**—MATERIALS.—Supply of road, sewer, paving, and other materials to the Goole U.D.C. Forms of tender of Mr. J. H. Castle, Surveyor, Council Offices, Goole.

MARCH 10.—**Haslingden.**—MATERIALS.—Supply to the Corporation of road, sanitary, and other materials. Forms of tender of Mr. J. S. Green, Borough Surveyor, Municipal Offices, Haslingden.

MARCH 10.—**Lewisham.**—ROAD MATERIAL.—Supply to the B.C. of road material. Form of tender, etc., at the Town Hall, Catford (Surveyor's Department).

MARCH 10.—**Loftus.**—MATERIALS.—Supply of road materials, stoneware pipes, bends, etc., to the U.D.C. Forms of tender of Mr. B. J. Wormleighton, Surveyor, Town Hall, Loftus, Yorks.

[Those with an asterisk (*) are advertised in this issue.]

FURNITURE, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

MARCH 10. — **London.** — MATERIALS.—Supply to the asylums under the control of the L.C.C. for twelve months of builders' materials, iron and brass goods, wrought-iron pipes and fittings, etc. Forms of tender at the Committee's Office, 6, Waterloo-place, Pall Mall, S.W.

MARCH 10.—**Macclesfield.**—MATERIALS.—Supply to the Cheshire County Asylum, Parkside, Macclesfield, of electrical goods, paints, paint brushes, glass, and lime. Forms of tender from Mr. Wm. Tingay, Clerk of Asylum.

MARCH 10. — **Preston.** — STORES.—Supply of stores required for ordinary purposes on the dock, dredgers, tugs, etc. Schedules of the Engineer and General Superintendent, Dock Offices, Preston.

MARCH 10. — **Rainford.** — ROAD MATERIALS. — Supply to the U.D.C. of macadam of various sizes, chippings, and dust for binding purposes. Tender forms of Mr. B. Smith, Clerk, Council Offices, Rainford.

MARCH 10.—**Rochdale.**—MATERIALS.—Supply to the Paving and Cleansing Committee of road, sewer, and other materials. Forms of tender of the Borough Surveyor, Town Hall, Rochdale.

MARCH 10. — **Salford.** — MATERIALS.—Supply of road, paving, sewer, and other materials to the Corporation. Particulars from Borough Engineer, Town Hall, Salford.

MARCH 10. — **Wardle.** — MATERIALS.—Supply to the U.D.C. of macadam, setts, and sanitary pipes. Forms of tender from the Surveyor, Council Offices, Wardle, Rochdale.

MARCH 11.—**Brentwood and Colchester.**—MATERIALS.—Supply to Brentwood Asylum, Brentwood, and Severalls Asylum, Colchester, of engineers' goods, cement, building materials, paints and oils, etc. Forms of tender of the Clerk of the Asylum, Brentwood, and the Clerk of the Severalls Asylum, Colchester.

MARCH 11. — **Carlisle.** — MATERIALS.—Supply to the Corporation of road, sewer, paving, and other materials. Forms of tender of Mr. Henry C. Marks, City Engineer, 36, Fisher-street, Carlisle.

MARCH 11.—**Newcastle-on-Tyne.**—MATERIALS.—Supply to the Corporation of materials. Forms of tender at the City Engineer's Office, Town Hall.

MARCH 11. — **Ogmore.** — MATERIALS.—Supply to the Ogmore and Garw U.D.C. of road, sewer, paving, and other materials. Forms of tenders of Mr. W. T. Ollivant Jones, Surveyor, Council Offices, Brynmenyn, Glam.

MARCH 11.—**Rochdale.**—STORES.—Supply to the Tramways Department of stores. Forms of tender of the General Manager, Mr. George Webster, Tramway Offices, Mellor-street, Rochdale. Deposit, 5s.

MARCH 11. — **Twickenham.** — MATERIALS. — Supply to the U.D.C. of road material, Portland cement, iron castings, street gullies and drain pipes. Forms of tender of Mr. Fred W. Pearce, Surveyor, Town Hall, Twickenham.

MARCH 11. — **Westminster.**—TRUCKS.—Supply to the City Council of forty trucks for use in street cleansing work, snow removal, etc. Specification at Westminster City Hall, Charing Cross-road, London, W.C.

MARCH 12. — **Caistor.** — MATERIALS.—Supply of 7,100 tons of granite, 4,760 tons of slag, and 800 tons of tar macadam to the R.D.C. Schedule of Mr. A. A. Padley, Clerk, Council Offices, Caistor, Lincolnshire.

MARCH 13. — **Gainsborough.** — MATERIALS.—Supply to the U.D.C. of road and other materials. Forms of tender of Mr. S. W. Parker, Surveyor, Council Offices, Gainsborough.

MARCH 13.—**Hale.**—MATERIALS.—Supply of road materials, sanitary fittings, etc., to the Hale U.D.C. Forms of tenders of Mr. T. Blagburn, Surveyor, Council Offices, Hale, Cheshire.

MARCH 13.—**Portsmouth.**—MATERIALS.—Supply to the Corporation of road paving, and sewer materials, oils and paints, castings, lime, bricks, timber, etc. Form of tender at the Town Clerk's Office, Town Hall.

MARCH 13. — **Swindon.**—MATERIALS.—Supply of various materials to the Corporation. Forms of tender of Mr. H. J. Hamp, Borough Surveyor, Town Hall, Swindon.

MARCH 15. — **Halifax.** — MATERIALS.—Supply to the Waterworks Committee of cast-iron pipes, gun-metal fittings, ironmongery, special castings, oils and paints, etc. Forms of tender of Mr. R. J. Hartley, Waterworks Engineer, Gibbet-street, Halifax.

MARCH 15. — **Leeds.** — MATERIALS.—Supply of various materials required by the Cleansing Department. Tender forms of Mr. J. B. Hamilton, Superintendent, Cleansing Department, Dock-street, Leeds.

* MARCH 15. — **London.** — MATERIALS, ETC.—The Corporation of London invite tenders for supply of certain materials and articles for a period of one year.

MARCH 15.—**Macclesfield.**—MATERIALS.—Supply to the R.D.C. of Macclesfield of road materials, earthenware pipes, brushes, and ironmongery. Form of tender of Mr. Frank Harrison, Union Offices, Macclesfield.

MARCH 15. — **Maidstone.** — ROAD MATERIALS. — Supply to the Corporation of road materials, etc. Forms of tender of the Borough Surveyor, Mr. T. F. Bunting, Fairmeadow, Maidstone.

MARCH 15.—**Paddington.**—MATERIALS.—Supply to the B.C. of bricks, tiles, etc., lime and cement, painting materials, timber, tar and pitch, broken granite, natural gritstone flags, and footway kerb. Forms of tender of the Borough Treasurer, Town Hall, Paddington, W. Charge, 2s. 6d. each form.

MARCH 15. — **Pocklington.**—STONE.—Supply to the Pocklington R.D.C. of best blue stone and slag. Forms of tender of Mr. Thomas Robson, Clerk, Pocklington.

MARCH 15. — **Sutton Coldfield.** — MATERIALS.—Supply to the Corporation of road, paving, sewer, and other materials. Forms of tender of Mr. W. A. H. Clarry, Borough Surveyor, Council House, Sutton Coldfield.

MARCH 15. — **Walsall.** — MATERIALS.—Supply to the R.D.C. of Walsall of road materials, castings, bricks, cement, etc. Forms of tender of Mr. W. P. Young, District Surveyor, Council Offices, Daw End, Rushall, Walsall.

MARCH 15.—**Wrexham.**—MATERIALS.—Supply to the Wrexham R.D.C. of roadstone, glazed pipes, tools, implements, etc. Forms of tender of Mr. Geo. Vernon Price, Council Offices, High-street, Wrexham.

* MARCH 22. — **London.**—WINDOW-CLEANING.—The Commissioners of H.M. Works, etc., invite tenders for window-cleaning.

ENGINEERING, IRON, AND STEEL.

MARCH 8.—**Burma.**—IRONWORK.—Supply to the Burma Railways Company, Ltd., of (*a*) galvanised steel or ironwork, 95 tons, etc.; (*b*) steel material, tons 167, 13.0.0; (*c*) pig iron, 200 tons. Specifications of Mr. W. Home, 199, Gresham House, Old Broad-street, E.C. Charge, £1 for (*b*) and 10s. for (*c*).

MARCH 9.—**Edinburgh and Glasgow.**—SMITHS' WORK.—The Commissioners of His Majesty's Works and Public Buildings invite tenders for the execution of ironfounders' and smiths' work in connection with the ordinary works and repairs to buildings in their charge in Edinburgh and Glasgow respectively for one year. Schedule of prices of H.M. Office of Works, Parliament-square, Edinburgh. Deposit, 2s. 6d.

MARCH 10. — **Edinburgh.** — PIPES.—Supply to the Edinburgh and District Water Trust of 1,100 tons of 36-in. cast-iron pipes. Form of tender of the engineers, Messrs. J. & A. Leslie & Reid, 12, St. Giles-street, Edinburgh.

MARCH 13.—**Bradford.**—DESTRUCTOR.—The Corporation invite tenders and schemes for the work required in erection of new destructor, boiler, and setting at the Sunbridge-road Destructor Works, and for the removal of the old destructor, boilers, and other accessories. Specification of the City Architect, Town Hall, Bradford.

MARCH 15.—**Coventry.**—PIPES, ETC.—Supply to the Waterworks and Fire Brigade Committee of cast-iron pipes, lead pipes, solder, hydrant and valve boxes, etc. Form of tender of Mr. J. E. Swindlehurst, Water Engineer, Saint Mary's Hall.

MARCH 16. — **London.**—ENGINES, ETC.—Supply and erection complete at the North Woolwich Pumping Station, London, E., of two vertical, enclosed, compound type steam-engines, also of one surface condensing set, complete with air and circulating pumps, etc., for the L.C.C. Specification, etc., from the Chief Engineer of the Council, County Hall, Spring-gardens, S.W. Deposit, £2.

MARCH 16.—**London.**—TRAMWAYS.—Reconstruction on the underground conduit system of traction of the tramways in Grange-road, Southwark Park-road, Raymouth-road, and Rotherhithe New-road, for the L.C.C. The length of track is about three miles of single line. Quantities, etc., from the Council's Chief Engineer, County Hall, Spring-gardens, S.W. Deposit, £5.

MARCH 17. — **Chelmsford.**—PUMPING PLANT.—Provision and erection for the Corporation of pumping plant at Admiral's Park Waterworks. Specifications of Mr. Percival T. Harrison, Borough Engineer, Municipal Offices, Chelmsford. Deposit, £2 2s.

MARCH 22.—**South Africa.**—RAILWAY MATERIAL.—Supply to the South African Railway Administration of 294,000 transverse steel sleepers, together with proportionate quantities of steel-clip washers, bolts and nuts, and spring washers. Specifications at the office of the High Commissioner for the Union of South Africa, 32, Victoria-street, E.C.

ROAD, SANITARY, AND WATER WORKS.

MARCH 8.—**Bootle.**—SANITARY.—The Bootle Corporation invite tenders for sanitary improvements. Specifications at the Borough Engineer's Office.

MARCH 9.—**Bollington.**—PAVING.—Paving with granite setts parts of Henshall-road, Grimshawlane, and Wellington-road for the Bollington U.D.C. Specifications from Mr. H. W. A. Carter, Surveyor, Council Offices, Bollington.

MARCH 9. — **Manchester.**—SANITARY, ETC.—For sanitary fittings, concrete and wood floors, at the hospitals at the institution, West Didsbury, near Manchester, for the Guardians of South Manchester. Specification of Mr. David S. Bloomfield, Clerk, Guardians' Offices, All Saints', Manchester.

MARCH 9.—**Stockton.**—SEWER.—Construction of 9-in. pipe sewer, etc., at Wolveston for the Stockton R.D.C. Quantities of Mr. J. Rodham, Finkle-street, Stockton-on-Tees.

MARCH 9.—**Wolviston.**—SEWER.—Construction for the P.C. of sewer, manholes, tanks, chambers, etc., and the underdrainage of 2 acres of land for sewage disposal purposes. Quantities of Mr. John Rodham, Finkle-street, Stockton-on-Tees.

MARCH 10. — **Birmingham.** — ROADS.—Reconstruction of Elmhurst-road, Grove Hill-road, Headingley-road, and Uplands-road (part of), Handsworth. Quantities of Mr. Henry E. Stilgoe, City Engineer, the Council House, Birmingham. Deposit, £2.

MARCH 10.—**Enfield.**—STREET WORKS.—Making up Queen's-road and Stanley-road for the U.D.C. Specifications of Mr. R. Collins, Surveyor, Public Offices, Enfield.

MARCH 10.—**Melton Mowbray.**—SEWER.—Construction of 9-in. sewer, etc., at Stathern for the Melton Mowbray R.D.C. Specifications of Mr. G. Edgar Fryer, Surveyor, Thorpe End, Melton Mowbray.

MARCH 10. — **Rochdale.** — STREET WORKS. — Making up passage behind Nos. 47 to 57, Henry-street, and between Nos. 4 and 12, Sussex-street: also the passage off Keswick-street, Castleton Moor, behind Nos. 716 to 726, Manchester-road. Quantities at the Borough Surveyor's Office.

MARCH 11. — **Bournemouth.** — SANITARY.—For mason, paviors', and drainage work required by the Health Committee for one year. Particulars of Mr. F. W. Lacey, Borough Surveyor, Town Hall.

MARCH 11. — **Gloucester.**—WATERWORKS.—Preparing pumping-station site and construction of approach road at Ketford; erection of pumping-station buildings and foundations at Ketford; supplying and laying mains from pumping station to reservoir at Madam's Wood; forming site and building reservoir at Brand Green, for the Gloucester Corporation. Quantities of Messrs. Fox, Moore, Bateman, & Fox, 5, Victoria-street, Westminster. Deposit, £5.

MARCH 11. — **Leeds.** — STREET WORKS.—Making up footpaths in the following streets:—Grove Hall-drive, Ingham-street, Hartley-crescent (part), Rider's-buildings, Glossop-view, Bentley-lane, St. Michael's-lane, Cross Bath-street. Quantities at the Highways and Permanent Way Department, 155, Kirkstall-road, Leeds.

MARCH 11. — **Rawtenstall.** — STREET WORKS.—Paving and sewering, etc., of Carr-road, Higher Mill-street, Newgate-street, Stone-street, Lench-street, street at north side of Boothman's-terrace (Bridleway), Melbourne-street, and Dale-street. Quantities of Mr. James Johnson, Borough Surveyor, Town Hall, Rawtenstall. Deposit, £2.

MARCH 12. — **Wirral.**—SEWAGE DISPOSAL.—Construction of sewage disposal works in the parish of Eastham for the Wirral R.D.C. Quantities of the Surveyor, Mr. W. Webb Shennan, 9, Hamilton-square, Birkenhead.

MARCH 15.—**Glasgow.**—SEWERS.—Construction for the Corporation of a 15-in. and 12-in. pipe sewer in (*a*) White-street, Govan, and (*b*) Cross-loan-road. Specifications at the Office of Public Works (Govan Branch), Town Hall, Govan. Also a 12-in. pipe sewer in Ann-street, Pollokshaws, and an 18-in. and 12-in. pipe sewer in Main-street, Pollokshaws. Specifications at the Office of Public Works, 64, Cochrane-street.

MARCH 16.—**Lanchester.**—CULVERT.—Construction of a brick and concrete culvert over Small Dope Burn, under Knitsley Viaduct, near Lanchester, Co. Durham, for the North-Eastern Railway Company. Quantities of Mr. C. F. Bengough, the Company's Engineer at York.

* MARCH 17.—**Andover.**—HEATING.—The Southampton C.C. invite tenders for heating installation (Gould system) in a new school.

MARCH 17.—**Northwich.**—WATERWORKS.—Sinking a deep borehole at Utkinton, near Tarporley, and for conducting a fourteen days' and nights' steam pumping test, for the U.D.C. of Northwich. Schedules from the engineers, Messrs. John Newton, Son, & Bayley, civil engineers, 19, Cooper-street, Manchester. Deposit, £1 1s.

MARCH 22. — **Castleford.** — STREET WORKS.—Works of private street improvements in Commercial-street and Back Hugh Ambler-street for the Castleford U.D.C. Specifications of Mr. William Green, Surveyor, Council Offices, Castleford.

MARCH 22. — **Ince-in-Makerfield.** — SEWERAGE WORKS.—Construction of sewage works at Westwood, Lower Ince, for the U.D.C. of Ince-in-Makerfield. Quantities of Mr. Albert T. Swain, Engineer and Surveyor to the Council, Council Offices, Ince, near Wigan. Deposit, £3.

* MARCH 24.—**Enfield.**—HOT-WATER SERVICE.—The Edmonton Guardians invite tenders for new hot-water service, etc.

MARCH 24. — **Portishead.** — STREET WORKS.—Making up Gardner-road, Portishead, for the Portishead U.D.C. Specification at the Council Offices, Portishead

Auction Sales.

* MARCH 9. — **Camden Town.** — Mr. H. W. Smith will sell by auction, on the premises, a stock of timber.

* MARCH 10.—Messrs. Churchill & Sim will sell by auction, at the Great Hall, Winchester House, Old Broad-street, E.C., an assortment of deals, battens, boards, timbers, etc.

* MARCH 16.—**Paddington.**—Mr. H. W. Smith will sell by auction, on the premises, the stock and plant of a stone merchant and general mason.

* MARCH 18.—**Holloway.**—Mr. H. W. Smith will sell by auction, on the premises, the stock and plant of a builder's merchant.

* MARCH 19.—**Reigate.**—Messrs. J. T. Skelding & Co. will sell by auction, on the premises, the stock and plant of a builder.

* MARCH 25. — **Strand.** — Messrs. Farebrother, Ellis, & Co. will sell by auction, at the Mart, a freehold building site.

Public Appointment.

* MARCH 10.—CLERK OF WORKS.—The Watford Guardians invite applications for the above post. Salary, 3½ guineas per week.

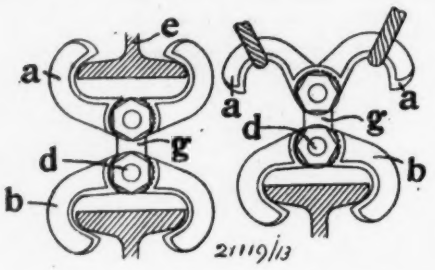
[Those with an asterisk (*) are advertised in this issue.]

PATENTS—*Continued from page 233.*

downwardly-curved air-pipe *d* may be fitted in the flush-pipe *e*.

21,119 of 1913.—François Blanc: Suspending beams.

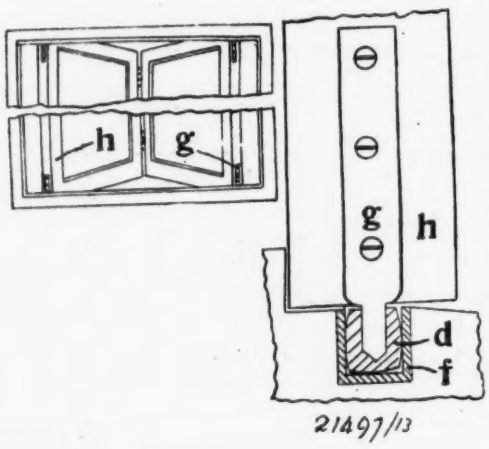
This relates to claws for lifting, suspending, and other purposes, which grip more tightly the more weight there is suspended therein, and which are constructed of two similarly curved members disposed in opposite directions and pivoted together by a bolt. The claws are used either in pairs connected by links and made to be reversible, or singly, in combination with a suspending collar or link. Two



pairs of jaws *a b*, connected together by a pair of links *g*, may be employed for suspending a track or girder beneath a girder *e*. The upper jaws may be held in the hand and the device used for transporting purposes. The lower jaws *b* may be turned through a right angle. The lower jaws may be reversed or replaced by a band and used for supporting pipes. The jaws *b* may be removed and the hooks of a tackle suspended from the bolt *d*. The upper jaws *a* may be reversed as shown, so as to carry a girder by means of cables.

21,497 of 1913.—Benjamin Smith: Windows.

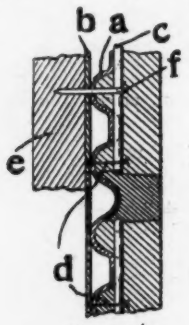
This relates to windows comprising a pair of sashes hinged together, their outer corners being mounted to slide in grooves in the frame.



Rollers *d*, which are mounted on pins, carried by plates *g*, secured to the sashes *h*, work in channel-guides *f*, sunk in the head and sill of the frame. The rollers *d* are barrel-shaped and are domed at their outer ends.

21,951 of 1913.—Raymond de Camp Weakley: Lathing; plastering.

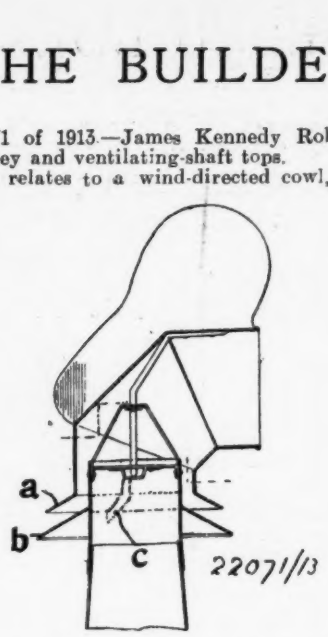
This relates to flexible lathing, which can be easily rolled, consisting of a corrugated paper sheet *a*, formed with a backing *b*, and



strengthened across the corrugations by wires *c*, secured by wire loops *d*. The complete lathing is fixed to studs or rafters *e* by means of staples *f*, and the ends of the wires *c* are also secured by nails: the face is rendered with Portland cement.

22,071 of 1913.—James Kennedy Robinson: Chimney and ventilating-shaft tops.

This relates to a wind-directed cowl, which



carries a flange *a* adjacent to a stationary flange *b* and ribs *c*, which direct wind entering between the flanges over the shaft top.

A WASHABLE DISTEMPER.

THE Standfast Paint Company (Cubitt Town Wharf, Cubitt Town, London, E.) have sent us a sample of a washable distemper, which they manufacture and which is claimed to be a great improvement on any water paint hitherto offered. Among the advantages which it is asserted the distemper possesses are included the following:—"(1) It is a genuine washable distemper; thirty-six hours after drying it is impervious to water, and can be washed with impunity; (2) it takes the place of priming colour, and, when dry, can be painted with oil colour; (3) it will adhere to any kind of surface, either clean or dirty; (4) when a coloured distemper is used, and two coats applied and allowed to dry, it can be varnished; (5) it can be grained in oil or water; (6) it is proof against atmospheric influences; (7) as a ground for enamel, it is equal in every respect to white lead; (8) it is specially suitable for Sirapite plaster, as no preliminary preparation is required before use; and (9) the distemper can be thinned with water as desired." We have tested the preparation in various ways, and we find that most of these claims are amply justified, especially the claims that the distemper can readily be applied to plaster or cement walls and that it dries so quickly that it can be washed soon after drying, when it can be painted with oil colour. We applied it to a dirty wall with very satisfactory results and found that it can be thinned with water to any consistency. It is a cheap and admirable preparation, which is specially suitable for the surface treatment of cement or plaster walls.

BUILDING IN BRITISH EAST AFRICA.

The new hotel at Naivasha for the Naivasha Hotel Syndicate is situate in one of the finest and most healthy spots in the Highlands of British East Africa, on the shore of the large lake at Naivasha. The building consists of a large lounge, dining-rooms, bar, and billiard-room, sitting-rooms, and all the usual offices pertaining to a large country hotel. Several suites of bedrooms are built, and extensive additional bedroom accommodation is being added. The building is built of local stone and roofed with red Mangalore tiles. With its wide verandahs and open stoops and curved gables, it has a feeling reminiscent of the old Dutch work in the south. Mr. MacAlister, of Naivasha, is the contractor, and Messrs. Tate-Smith & Henderson, of Nairobi and Kampala, are the architects.

LIBRARY AT SHREWSBURY SCHOOL.

A block of buildings, consisting of a library, reading-room, and picture gallery, is being built in connection with Shrewsbury School. The library will contain the collection of books which, with the exception of that at Eton, is without equal in any public school, and the art gallery is destined to house the water-colours, chiefly of the British School, which have been presented by Mr. E. B. Moser, a housemaster for over a quarter of a century. The reading-room will have a large bay-window overlooking the Severn and the surrounding country, and similar fine views will be obtainable from the Loggia. It will be a one-story structure of stone and brick, harmonising with the existing buildings. The architects are Messrs. Forsyth & Maule, Oxford-street, W., and the general contractor is Mr. Henry Price, Shrewsbury.

NOTICES.

Tel., Regent 5040. Telegrams, The Builder, London.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under ..... 6s. 0d.
Each additional line ..... 1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

Terms for series of Trade advertisements, and for front page and other special positions, on application.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under ..... 2s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps *must not* be sent; but all sums should be remitted by Postal Orders, payable to THE BUILDER LTD., to the office, 4, Catherine Street, Aldwych, W.C.

Advertisements are received up to SIX p.m. on WEDNESDAY, but "Classification" is impossible in the case of any which may reach the Office after FIVE p.m. on that day. Those intended for the Outside Cover should be in by TWELVE NOON on TUESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS must reach the Office before TWELVE NOON on TUESDAY.

Whilst every endeavour is made to ensure accuracy, it must be understood that the Publishers do not hold themselves in any way responsible for the correctness of statements contained in advertisements appearing in "THE BUILDER."

The Publishers cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommend that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have *Replies addressed to the Office*, 4, Catherine Street, Aldwych, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.
N.B.—The Reply Boxes are not intended for trade lists, circulars, and the like; should these be received, they cannot (if noticed) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES 1s. 9d. EACH. By post (carefully packed), 2s.

PRICES CURRENT OF MATERIALS.

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]

Lead prices have been slightly advanced this week.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River.	£ s. d.
Best Stocks	1 18 0
Picked Stocks for Facings	2 12 0

Per 1000, Delivered at Railway Depôt.

	£ s. d.		£ s. d.
Flettons	1 14 0	Best Blue Pressed Staffordshire	3 15 0
Best Fareham Red	3 12 0	Do. Bullnose	4 0 0
Best Red Pressed Ruabon Facing	5 0 0	Best Stourbridge Fire Bricks	4 0 0
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers	13 0 0	Double Headers	15 10 0
		One Side and two Ends	19 10 0
Headers	12 10 0	Two Sides and one End	20 10 0
Quoins, Bullnose and 4½ in. Flats	16 10 0	Splays and Squints	18 0 0
D'ble Str'tch'rs	18 10 0		

Second Quality £1 10s. per 1000 less than best.

	s. d.	
Thames and Pit Sand	7 6	per yard, delivered.
Thames Ballast	6 0	" " "
Best Portland Cement	38 0	per ton, "
Best Ground Blue Lias Lime	21 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 14s. 0d. per yard delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly dpt.

STONE.

Per Ft. Cube.

	s. d.
BATH STONE—delivered on road waggons, Paddington Depôt	1 7½
Do. do. delivered on road waggons, Nine Elms Depôt	1 9½
PORTLAND STONE (20 ft. average)—	
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 4½
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 6½

Per Ft. Cube, delivered at Railway Depôt.

	s. d.		s. d.
Ancaster in blocks	1 10	Closeburn Red Freestone	2 0
Beer in blocks	1 6		
Greenshill in blocks	1 10	Red Mansfield Freestone	2 4
Darley Dale in blocks	2 4	Talacre & Gwespyr Stone	2 4
Red Corsehill in blocks	2 3		

STONE (*Continued*).

YORK STONE—*Robin Hood Quality.*

Per Ft. Cube, Delivered at Railway Depôt.	s.	d.
Scappled random blocks	2	10
Per Ft. Super., Delivered at Railway Depôt.		
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8
6 in. rubbed two sides ditto, ditto	2	6
3 in. sawn two sides slabs (random sizes)	0	11½
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7
1½ in. to 2 in. ditto, ditto	0	6

HARD YORK—

Per Ft. Cube, Delivered at Railway Depôt.		
Scappled random blocks	3	0
Per Ft. Super., Delivered at Railway Depôt.		
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2	8
6 in. rubbed two sides ditto	3	0
8 in. sawn two sides slabs (random sizes)	1	2
2 in. self-faced random flags	0	5

SLATES.

Per 1000 of 1200 at Railway Depôt.

In. In.	£	s.	d.	In. In.	£	s.	d.
20 x 10 best blue Bangor	13	5	6	20 x 12 ditto	14	5	0
20 x 12 ditto	14	7	6	16 x 8 ditto	7	0	0
20 x 10 1st q'lity ditto	13	0	0	22 x 10 best blue Portmadoc	12	12	6
				16 x 8 ditto	6	10	6

TILES.

At Railway Depôt.

	s.	d.		s.	d.
Best plain red roofing (per 1000)	42	0	Best "Hartshill" brand, plain sand-faced (per 1000)	45	0
Hip and Valley (per doz.)	3	7	Do. pressed (per 1000)	42	6
Best Broseley (per 1000)	50	0	Do. Ornamental (per 1000)	47	6
Do. Ornamental (per 1000)	52	6	Hip (per doz.)	4	0
Hip and Valley (per doz.)	4	0	Valley (per doz)	3	6
Best Ruabon red, brown, or brindle (Edw'ds) (pr1000)	57	6	Staffords. (Hanley) Reds or Brindled (per 1000)	42	6
Do. Ornamental (per 1000)	60	0	Hand-made sand-faced (per1000)	45	0
Hip (per doz.)	4	0	Hip (per doz.)	4	0
Valley (perdoz.)	3	0	Valley (perdoz.)	3	6

WOOD.

BUILDING WOOD.	At per standard.					
	£	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	19	0	0	20	12	6
Deals: best 3 in. by 9 in.	19	0	0	20	10	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	17	15	0	19	0	0
Battens: best 2½ in. by 6 in. and 3 in. by 6 in.	0	10	0	less than 7 in. and 8 in. less than best		
Deals: seconds	1	0	0			
Battens: seconds	0	10	0	"	"	"
2 in. by 4 in. and 2 in. by 6 in.	16	0	0	17	10	0
2 in. by 4½ in. and 2 in. by 5 in.	15	0	0	16	10	0
Foreign Sawn Boards— 1 in. and 1½ in. by 7 in.	0	10	0	more than battens.		
¾ in.	1	0	0	"		
Fir timber: best middling	At per load of 50 ft.					
Memel (average specification)	6	15	0	7	15	0
Seconds	6	0	0	6	10	0
Small timber (8 in. to 10 in.)	5	5	0	5	10	0
Small timber (6 in. to 8 in.)	4	10	0	5	0	6
Swedish balks	4	0	0	4	10	0
Pitch-pine timber (30 ft. average)	8	5	0	9	0	0

JOINERS' WOOD.	At per standard.					
White Sea: first yellow deals, 3 in. by 11 in.	33	15	0	35	0	0
3 in. by 9 in.	31	15	0	33	0	0
Battens, 2½ in. and 3 in. by 7 in.	23	7	6	24	7	6
Second yellow deals, 3 in. by 11 in.	27	5	0	28	5	0
Do. 3 in. by 9 in.	25	5	0	26	5	0
Battens, 2½ in. and 3 in. by 7 in.	19	0	0	20	0	0
Third yellow deals, 3 in. by 11 in. and 9 in.	20	2	6	21	2	6
Battens, 2½ in. and 3 in. by 7 in.	17	10	0	18	0	0
Petersburg: first yellow deals, 3 in. by 11 in.	29	10	0	31	0	0
Do. 3 in. by 9 in.	25	5	0	26	5	0
Battens	19	5	0	20	5	0
Second yellow deals, 3 in. by 11 in.	21	10	0	23	0	0
Do. 3 in. by 9 in.	20	5	0	21	10	0
Battens	17	10	0	18	10	0
Third yellow deals, 3 in. by 11 in.	17	15	0	18	15	0
Do. 3 in. by 9 in.	17	5	0	18	5	0
Battens	17	0	0	17	10	0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	22	10	0	24	0	0
First white deals, 3 in. by 9 in.	21	0	0	22	10	0
Battens	18	0	0	19	0	0
Second white deals, 3 in. by 11 in.	20	0	0	21	0	0
Second white deals, 3 in. by 9 in.	19	0	0	20	0	0
Battens	17	10	0	18	10	0
Pitch-pine deals	34	0	0	35	0	0
Under 2 in. thick extra	0	10	0	1	0	0
Columbian or Oregon Pine, best quality	28	0	0	29	0	0
Yellow Pine—First, regular sizes	57	0	0	upwards.		
Oddments	39	0	0	"		
Seconds, regular sizes	43	10	0	"		
Oddments	37	0	0	"		
Kauri Pine—Planks per ft. cube	0	6	9	0	7	6

WOOD (*Continued*).

JOINERS' WOOD (*Continued*)—	£	s.	d.	£	s.	d.
Oak Logs—						
Large, per ft. cube	0	5	0	0	6	0
Small " "	0	4	0	0	5	0
Wainscot Oak Logs, per ft. cub	0	10	6	0	12	6
Dry Wainscot Oak, per ft. super, as inch	0	0	11	0	1	3
¾ in. do. do.	0	0	10	0	1	0
Dry Mahogany—Honduras, Tabasco, per ft. super, as inch	0	0	11	0	1	4
Selected, Figury, per ft. super, as inch	0	1	6	0	2	6
Cuba Mahogany	0	1	6	0	2	6
Dry Walnut, American, per ft. super, as inch	0	0	11	upwards. 0	1	3
French, "Italian," Walnut	0	0	11	0	1	6
Teak, per load (Rangoon or Moulmein)	28	0	0	34	0	0
Do., do. (Java)	24	0	0	27	0	0
American Whitewood planks, per ft. cube	0	6	6	0	7	6
Prepared flooring, etc.—	Per square.					
1 in. by 7 in. yellow, planed and shot	0	18	0	1	0	0
1 in. by 7 in. yellow, planed and matched	0	18	0	1	0	0
1¼ in. by 7 in. yellow, planed and matched	1	2	0	1	5	0
1 in. by 7 in. white, planed and shot	0	17	6	1	0	0
1 in. by 7 in. white, planed and matched	0	18	0	1	0	0
1¼ in. by 7 in. white, planed and matched	1	2	0	1	5	0
¾ in. by 7 in. yellow, matched and beaded or V-jointed boards	0	14	6	0	16	6
1 in. by 7 in. " "	0	18	6	1	1	0
¾ in. by 7 in. white " "	0	14	6	0	16	6
1 in. by 7 in. " "	0	18	6	1	1	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London or delivered Railway Vans, per ton.					
	£	s.	d.	£	s.	d.
Rolled Steel Joists, ordinary sections	9	10	0	10	10	0
Compound Girders, ordinary sections	12	0	0	13	0	0
Steel Compound Stanchions	13	0	0	15	0	0
Angles, Tees, and Channels, ordinary sections	12	0	0	13	0	0
Flitch Plates	12	0	0	13	0	0
Cast Iron Columns & Stanchions, including ordinary patterns	9	0	0	10	0	0

METALS.

	Per ton, in London.					
IRON—	£	s.	d.	£	s.	d.
Common Bars	9	10	0	10	0	0
Staffordshire Crown Bars, good merchant quality	9	15	0	10	5	0
Staffordshire "Marked Bars"	11	10	0	—		
Mild Steel Bars	9	15	0	10	5	0
Hoop Iron, basis price	10	10	0	—		
" " Galvanised	18	10	0	—		
(And upwards, according to size and gauge.)						
Sheet Iron Black—						
Ordinary sizes to 20 g.	11	0	0	—		
" " 24 g.	12	0	0	—		
" " 26 g.	13	10	0	—		
Sheet Iron, Galvanised, flat, ordinary quality—						
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	16	0	0	—		
Ordinary sizes to 22 g. and 24 g.	16	10	0	—		
Ordinary sizes to 26 g.	17	10	0	—		
Sheet Iron, Galvanised, flat, best quality—						
Ordinary sizes to 20 g.	18	10	0	—		
" " 22 g. and 24 g.	19	0	0	—		
Ordinary sizes to 26 g.	20	0	0	—		
Galvanised Corrugated Sheets—						
Ordinary sizes, 6 ft. to 8 ft. 20 g.	15	0	0	—		
Ordinary sizes, 22 g. and 24 g.	16	0	0	—		
Ordinary sizes, 26 g.	17	0	0	—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	13	0	0	—		
Best Soft Steel Sheets, 22 g. & 24 g.	14	0	0	—		
Best Soft Steel Sheets, 26 g.	16	0	0	—		
Cut Nails, 3 in. to 6 in.	13	0	0	13	10	0
(Under 3 in., usual trade extras.)						

LEAD, &c.

	Delivered in London.					
	£	s.	d.	£	s.	d.
LEAD—Sheet, English, 4 lb. and up	24	15	0	—		
Pipe in coils	25	5	0	—		
Soil pipe	28	5	0	—		
Compo pipe	28	5	0	—		
NOTE—Delivery in country in not less than 5 cwt. lots. 1s. per cwt. extra.						
ZINC—	In casks of 10 cwt.					
Sheet—	65	0	0	—		
COPPER—						
Strong Sheet per lb.	0	1	5	—		
Thin " "	0	1	7	—		
Copper nails "	0	1	5	—		
Copper wire "	0	1	5	—		
BRASS—						
Strong Sheet "	0	1	4	—		
Thin "	0	1	5	—		
TIN—English Ingots "	0	1	8	—		
SOLDER—Plumbers' "	0	0	10	—		
Tinmen's "	0	1	1	—		
Blowpipe "	0	1	4	—		

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.

15 oz. thirds	6d.	26 oz. fourths	6½d.
" fourths	5½d.	32 oz. thirds	8½d.
21 oz. thirds	6½d.	" fourths	7d.
" fourths	6d.	Fluted Sheet, 15 oz.	5d.
26 oz. thirds	7d.	" 21 oz.	6d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.

⅛ Rolled plate	3½d.
⅛ Rough rolled and rough cast plate	3½d.
⅛ Rough rolled and rough cast plate	4d.
Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white	5d.
Ditto, tinted	6d.

* Not less than two crates.

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	2	6
" " " in barrels	"	0	2	7
" " " in drums	"	0	2	9
Boiled " " in barrels	"	0	2	9
" " " in drums	"	0	2	11
Turpentine in barrels	"	0	3	3
" in drums	"	0	3	6
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		30	15	0
Red Lead, Dry	per ton	29	10	0
Best Linseed Oil Putty	per cwt.	0	10	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.

	Per gallon. £	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	9
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	6
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	0
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	6
French and Brush Polish	0	10	0

[Owing to the exceptional circumstance which prevail at the present time, prices of materials should be confirmed by inquiry.]

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TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 2 p.m. *on Wednesday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.* unless in some exceptional cases and for special reasons.]

***Denotes *accepted*. †Denotes *provisionally accepted*.**

BILSTON.—Paving between Town Hall and Stowheath-lane, for the Urban District Council:—

Durex Co.* £7,675

BIRMINGHAM.—For rebuilding and alterations to premises after fire, Great Hampton-row, Birmingham, for Messrs. Bodill, Parker, & Co., Ltd. Messrs. Iugall, Bridgwater, & Porter, architects, 3, Temple row, West Birmingham:—

W. Lowe & Sons	£3,695	J. Dallow & Sons	£3,084
J. Barnsley & Sons	3,555	W. J. Whittall & Sons*	2,983
W. Bishop	3,177		

BRISTOL.—Installation of hot-water apparatus in Greenbank School, for the Bristol Education Committee:—

J. Crispen & Sons* £943 17 9

CROYDON.—For additions at Waddon waterworks, for the Corporation :—

Lavington Ltd., Clapham*	£2,793

CROYDON.—For supply of nine revolving sewage distributors, for the Corporation :—

Hartley Sons & Co.	£730 0 0
J. Stone & Co.	585 0 0
J. Wolstenholme & Son	485 0 0
Whitehead & Poole	459 0 0
Tuke & Bell, Ltd.	445 0 0
F. Bird & Co.	419 10 0
Ames Crosta Sanitary Engineering Co.	393 10 0
Ham, Baker & Co.	369 0 6
G. Jennings, Ltd.	335 0 0
Adams Hydraulics, Ltd.*	314 15 0
W. E. Farrer	305 0 0

DURHAM.—Alterations to the workhouse laundry, for the Board of Guardians :—

J. W. White	£2,685 0	G. Gradon & Sons	£2,201 10
R. Blackett & Son	2,395 0	W. Hall	2,142 0
J. Huntley & Son	2,269 0	C. W. Gibson & Brother, Durham*	2,052 10
R. Stafford & Son	2,232 0		
W. B. Cooper	2,209 0		

HALIFAX.—Execution of the various works required in the erection at the gasworks of a vertical retort stack complete with chimney or chimneys, overhead coal hoppers, coal breaker, conveyor, elevator, hoists, coke screening plant, coke washing plant, and clinker washing plant, for the Corporation :—

The Woodhall-Duckham Vertical Retort and Oven Construction Co., Ltd.*	£33,276

LITTLEHAMPTON. — For erection of public lavatories, etc., at Sea View Cottage, near Parade, for the Littlehampton Urban District Council. Mr. H. Howard, Council's Surveyor, Town Offices, Littlehampton :—

Linfield & Sons, Ltd., Littlehampton*	£968

LITTLEHAMPTON.—For erection of an isolation hospital at Wick, Littlehampton, for the Urban District Council. Quantities by Mr. H. Howard, Council's Surveyor, Town Offices, Littlehampton :—

Linfield & Sons, Ltd., Littlehampton*	£2,743

LONDON.—Enlargement of Wix's-lane School, Clapham, for the London County Council :—

Wylie & Lochhead	£6,792 15 1
Rice & Son	6,681 0 0
W. Downs, Ltd.	6,378 0 0
W. King & Son	6,065 0 0
W. Moss & Sons, Ltd.	6,015 4 11
Holliday & Greenwood, Ltd.	5,939 0 0
W. E. Blake, Ltd.	5,929 3 4
J. & C. Bowyer, Ltd.	5,897 0 0
Triggs & Co.	5,770 0 0
Lole & Co., Trafalgar-square, Chelsea*	5,364 0 0

LONG EATON.—Erection of fencing and turfiing playground of the Secondary School, for the Derbyshire Education Committee :—

J. Bull*	£560 6 8

LONDON.—For wood block flooring required at the schools of the London County Council, for one year :—

—	*Zeta Wood Flooring Co.	Acme Flooring and Paving Co.	Excellence Wood Block Flooring Co.
Floors, per yard super	6s. 2d.	*Best*—Dowelled, 6s. 6d.; grooved and tongued, 6s. 3d. *Rio*—Dowelled, 6s.; grooved and tongued, 5s. 9d.	9s. 6d.
Extra for fair cutting and forming borders, per foot run	Included.	4d.	1d.
Ditto (circular), per foot run	"	6d.	2d.
Pipe holes, each	"	3d.	2d.
Dovetailed bonding blocks, one block in every 6 feet in length and in rows 3 feet apart	"	6d.	—

LONDON.—For fitting up main kitchen and scullery at the Maudsley Hospital, for the London County Council :—

McDowall, Stevens, & Co.	£574 0
Richmond Gas Stove and Meter Co.	550 0
Summerscales, Ltd.	523 5
J. & F. May	513 0
Moorwoods, Ltd.	498 10
T. Bradford & Co.	485 0
Falkirk Iron Co., Ltd., Falkirk*	462 14

NEWARK.—For erection of wash baths, for the Corporation :—

Plumbers: Harvey Bros.* / *Builders:* W. Smith & Son*	£343 10

NORTHAMPTON.—Building of new nurses' quarters, for the Northampton Board of Guardians :—

T. Higgs	£935	E. Archer & Sons	£869
H. Green	929	Souster & Sons	868
W. Heap	924	Sharman & Son	854
E. Green & Son	897	A. P. Hawtin	839
G. J. Fisher	880	W. H. Foster*	819
A. A. Clarke	876		

SAXMUNDHAM. — Alterations to premises in Rendham-road, for the Urban District Council :—

Gibbs & Rodwell*	£168

SOUTHAMPTON.—For steam pumping plant at Waterworks, for the Corporation :—

A. G. Potter & Co., London	£875

STAFFORD.—Erection of farm institute on the Stone-road, near Stafford, for the Staffordshire Education Committee :—

T. Godwin, Hanley*	£19,663

STOKE-ON-TRENT.—Re-roofing part of baths, for the Corporation :—

W. Twigg, Stoke*	£490

TILBURY.—Erection of teacher's house at Tilbury Upper Ward Council School, for the Essex Education Committee :—

G. Brown*	£437 10

WORCESTER.—Construction of new filters, etc., at the waterworks, for the Corporation :—

J. Wood & Sons, Worcester*	£7,697

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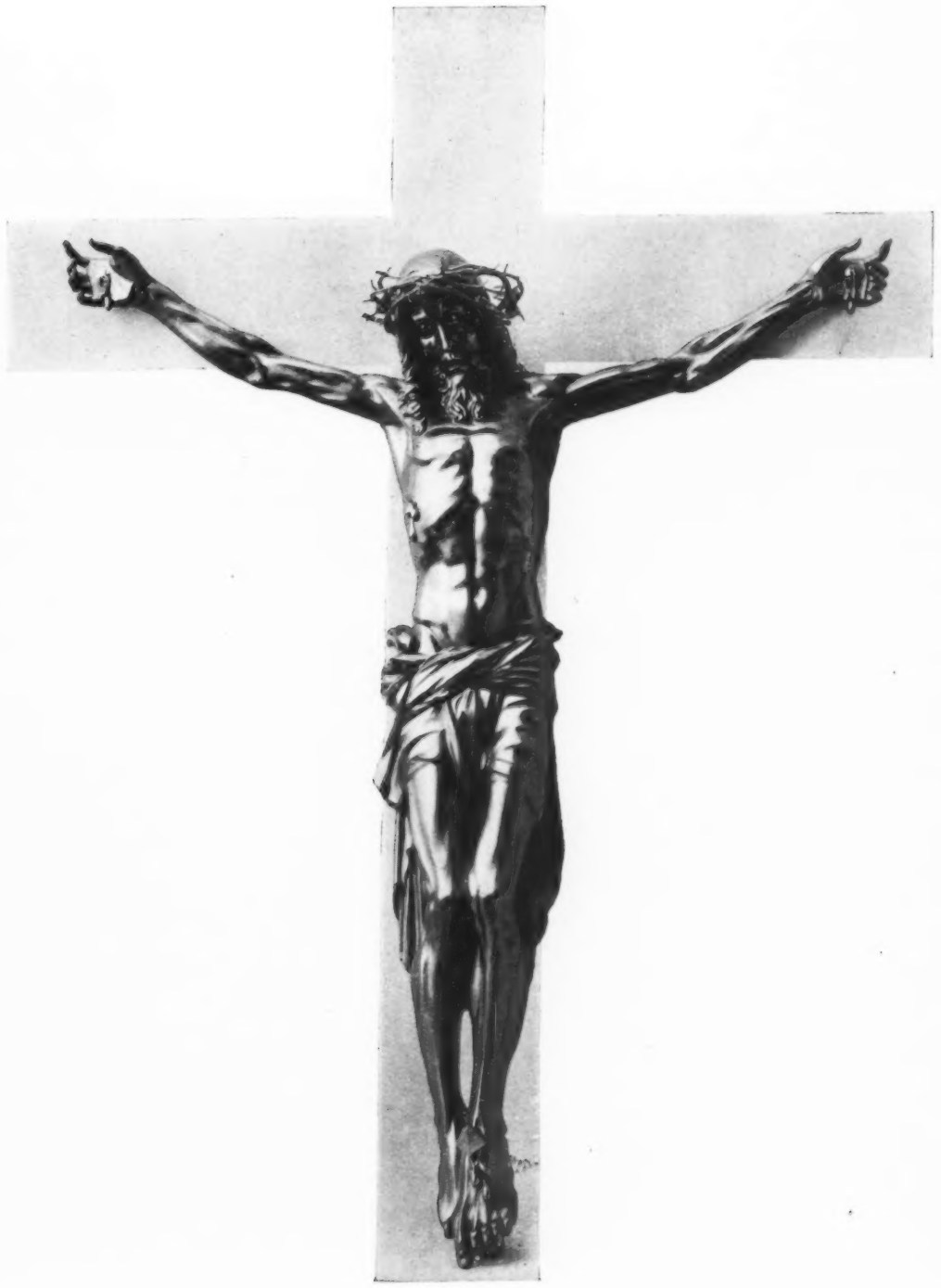
A.

METALWORK: WESTMINSTER CATHE FROM DE



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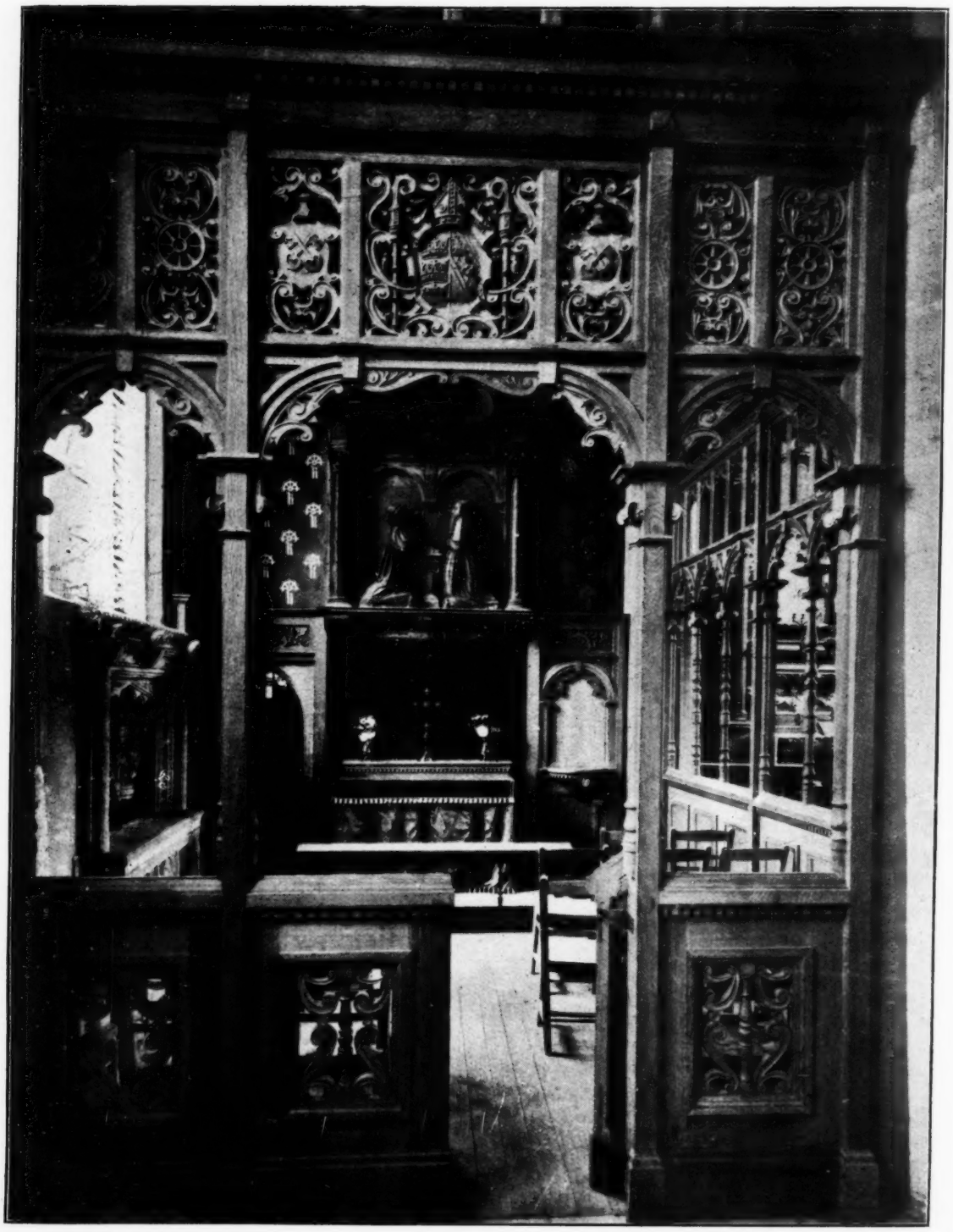

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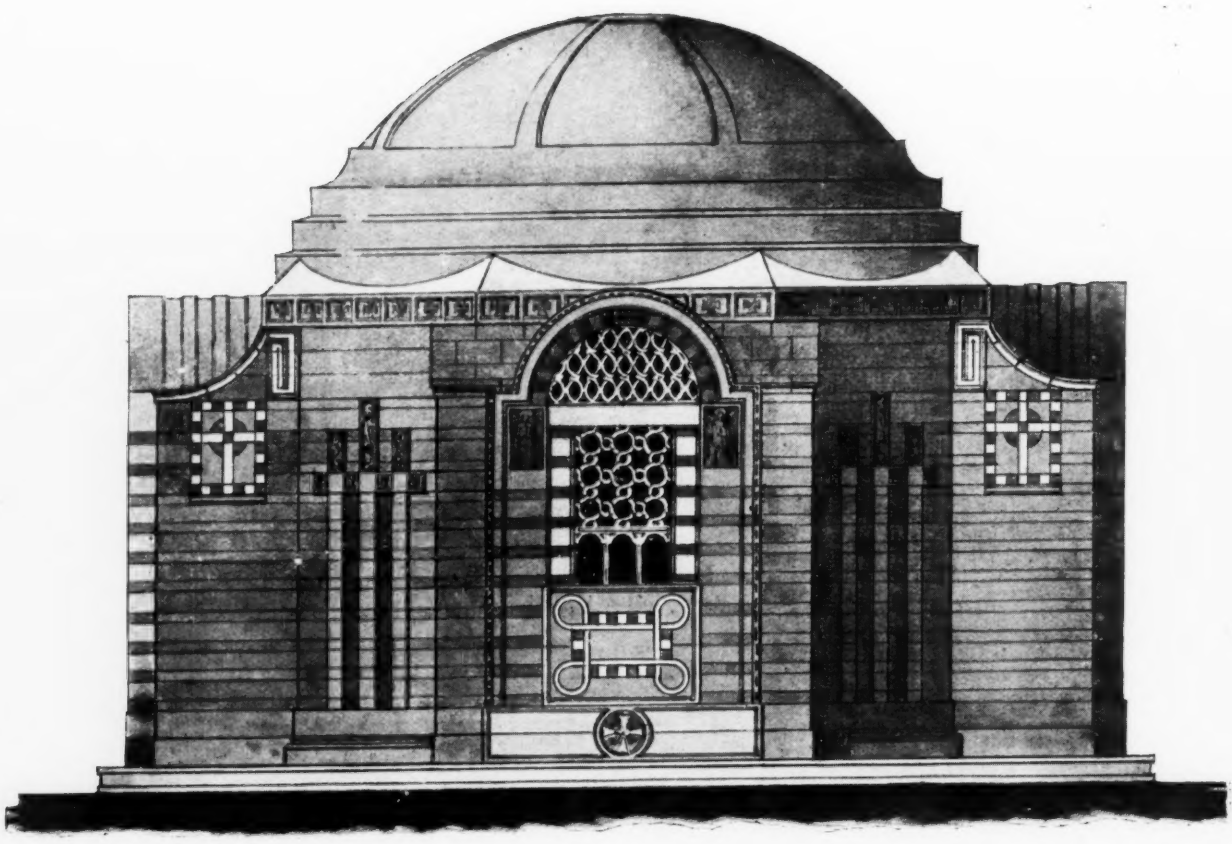
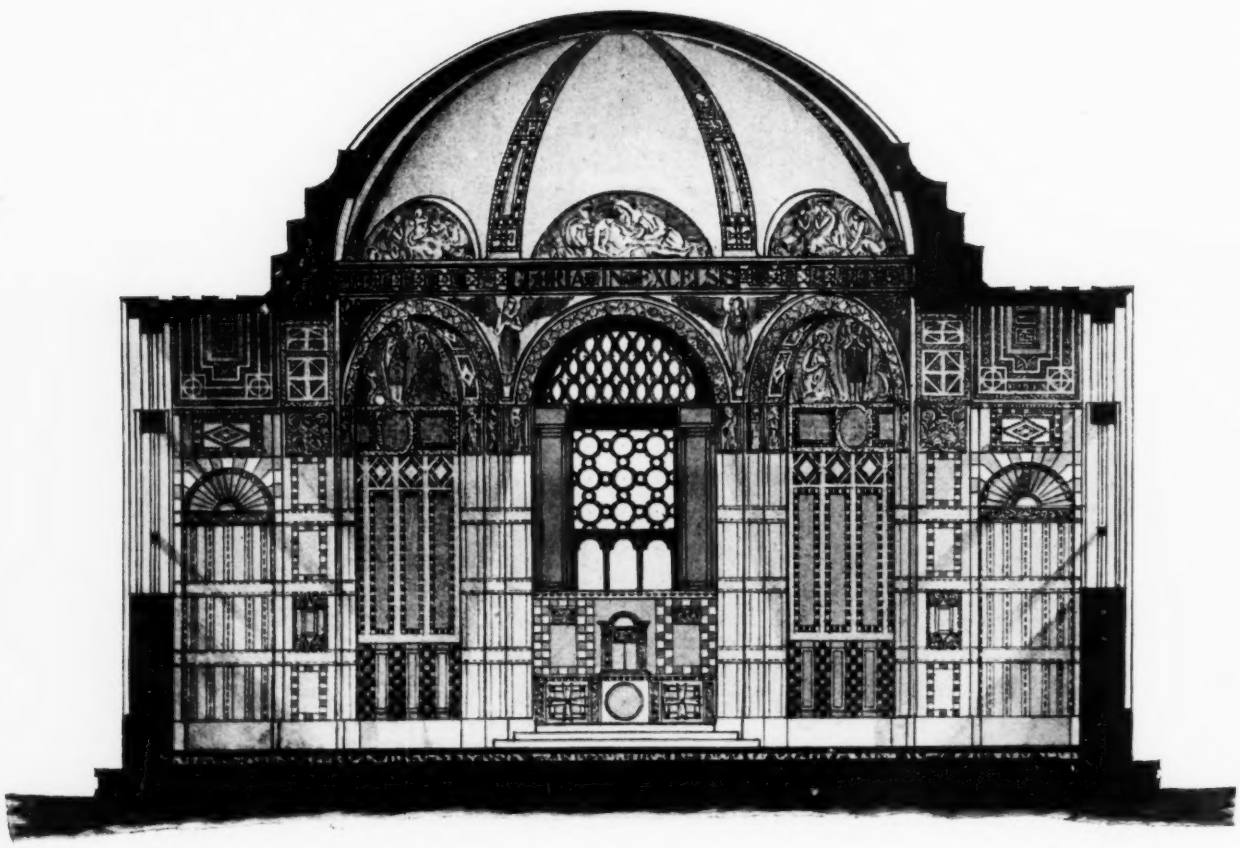


EASTERN ELEVATION.



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MR. HAROLD BRAKSPEAR, F.S.A., ARCHITECT.

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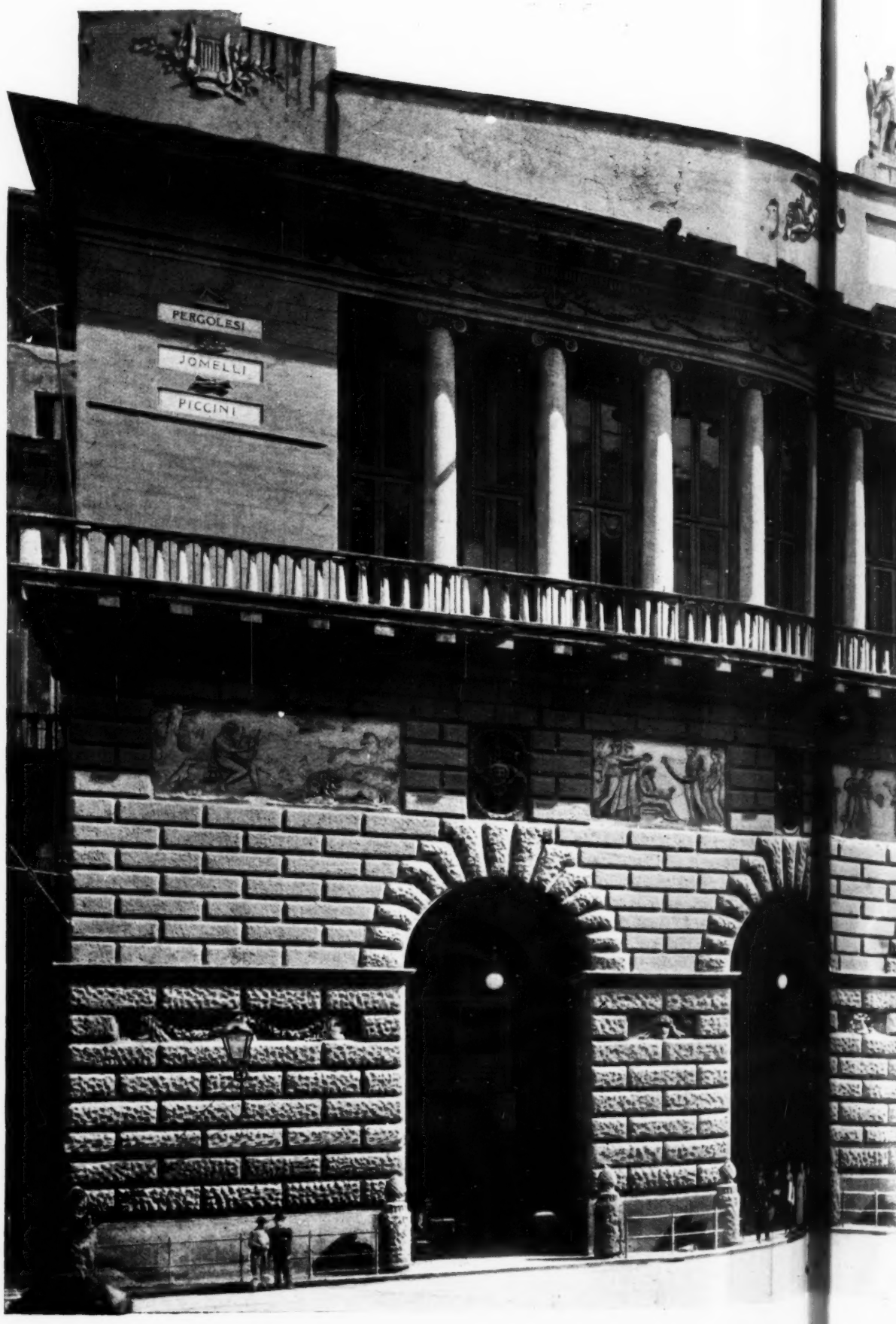

SAN CARLO THEATRE PLES: FR

G. MADERNO AND OLINI, ARC

EATRE PLES: FRONT ELEVATION.

ERNO AN OLINI, ARCHITECTS.